AIWA®

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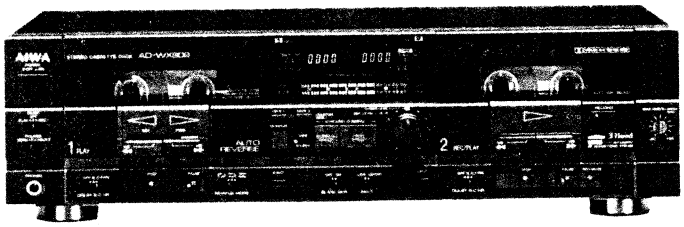
# SERVICE MANUAL

MODEL NO. AD-WX909

■STEREO CASSETTE DECK

■TYPE. HB, UB, EB, KB, ZB

■BASIC MECHANISM: X-3(1DECK)
DM-28(2DECK)



## SPECIFICATIONS

| | |
|---|---|
| **Type** | Stereo cassette tape deck |
| **Track format** | 4 tracks, 2 channels |
| **Power supply** | **AD-WX909E, Z**<br>AC 220 V, 50/60 Hz<br>**AD-WX909K**<br>AC 240 V, 50/60 Hz<br>**AD-WX909U,**<br>AC 120 V, 60 Hz<br>**AD-WX909H**<br>AC 120 V/220 V/240 V switchable, 50/60 Hz |
| **Power consumption** | 35 W |
| **Frequency response** | METAL tape: 10 – 20,000 Hz<br>$CrO_2$ tape: 10 – 19,000 Hz<br>NORMAL tape: 10 – 17,000 Hz |
| **Signal-to-noise ratio** | 75 dB (METAL tape DOLBY C NR ON) |
| **Wow and flutter** | Deck [1]<br>0.1% (According to DIN 45500)<br>0.055% (WRMS)<br>Deck [2]<br>0.09% (According to DIN 45500)<br>0.028% (WRMS) |
| **Tape speed** | 4.8 cm/sec. (1-7/8 ips), 9.5 cm/sec (Double speed) |
| **Recording system** | AC bias (frequency 100 kHz) |
| **Erase system** | AC erase |
| **Motor** | DC Servomotor × 2<br>DC Motor × 1 |
| **Heads** | Record head: × 1<br>Playback head: × 2<br>Erase head: × 1 |
| **Inputs** | LINE IN/CD maximum input sensitivity: 50 mV (over 50 kΩ) |
| **Outputs** | LINE OUT standard output level: 380 mV (0 VU); suitable load impedance: over 50 kΩ. |
| **Dimensions** | 430(W) × 126(H) × 316.5(D)mm |
| **Weight** | 6.2 kg |

- **Design and specificathions are subject to change without notice.**
- Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.
- Dolby and the ◻◻ symbol are trademarks of Dolby laboratories Licensing Corporation.
- **HX professional originated by BANG&OLUFSEN.**

AIWA Co., Ltd. Tokyo Japan

Printed in Japan

**See the FX—D1 service manual for the IC pin Description** and IC block diagram.

## ELECTRICAL MAIN PARTS LIST

※ Please order the all parts for this model to Japan.

| Ref. No. | Part No. | Description |
|---|---|---|
| === IC === | | |
| | 87-020-180 | IC,BA6146 |
| | 87-020-454 | IC,DM6851 |
| | 82-202-621 | IC,HD38702A39 |
| | 87-020-140 | IC,L78M12 |
| | 87-020-261 | IC,LA6358S |
| | 82-200-616 | IC,LC6520H-3279 |
| | 87-020-096 | IC,M4066BP |
| | 87-020-533 | IC,M4069UBP |
| | 87-020-679 | IC,M4572BP |
| | 87-027-895 | IC,M5218L |
| | 87-027-909 | IC,M54523P |
| | 87-020-680 | IC,NJM2068S |
| | 87-020-758 | IC,NJM2068SD |
| | 87-020-908 | IC,NJU4066BD |
| | 87-020-898 | IC,M74HC42P |
| | 87-027-937 | IC,TC4030BP |
| === TRANSISTOR === | | |
| | 87-026-214 | TRANSISTOR,DTA114Y |
| | 89-109-521 | TRANSISTOR,2SA952K |
| | 89-110-155 | TRANSISTOR,2SA1015GR |
| | 89-318-155 | TRANSISTOR,2SC1815GR |
| | 89-320-011 | TRANSISTOR,2SC2001K |
| | 89-321-204 | TRANSISTOR,2SC-2120Y |
| | 89-322-406 | TRANSISTOR,2SC2240BL |
| | 89-411-110 | TRANSISTOR,2SD1111 |
| | 89-412-753 | TRANSISTOR,2SD1275 |
| | 89-412-763 | TRANSISTOR,2SD1276QP |
| | 89-413-023 | TRANSISTOR,2SD1302S |

| Ref. No. | Part No. | Description |
|---|---|---|
| === MAIN-1 CIRCUIT BOARD SECTION === | | |
| PCB-A | * | MAIN-1 CIRCUIT BOARD |
| C1 | ★ 87-018-119 | CAP,CERA-SOL SS 100P |
| C2 | ★ 87-018-119 | CAP,CERA-SOL SS 100P |
| C3 | ★ 87-018-116 | CAP,CERA-SOL SS 56P |
| C4 | ★ 87-018-116 | CAP,CERA-SOL SS 56P |
| C11 | ★ 87-010-135 | CAP,ELECT BP 10-25 |
| C12 | ★ 87-010-135 | CAP,ELECT BP 10-25 |
| C13 | ★ 87-018-127 | CAP,CERA-SOL SS 470P |
| C14 | ★ 87-018-127 | CAP,CERA-SOL SS 470P |
| C15 | ★ 87-018-131 | CAP,CERA-SOL SS 1000P |
| C16 | ★ 87-018-131 | CAP,CERA-SOL SS 1000P |
| C31 | ★ 87-018-119 | CAP,CERA-SOL SS 100P |
| C32 | ★ 87-018-119 | CAP,CERA-SOL SS 100P |
| C37 | ★ 87-010-135 | CAP,ELECT BP 10-25 |
| C38 | ★ 87-010-135 | CAP,ELECT BP 10-25 |
| C39 | ★ 87-018-131 | CAP,CERA-SOL SS 1000P |
| C40 | ★ 87-018-131 | CAP,CERA-SOL SS 1000P |
| C41 | ★ 87-018-127 | CAP,CERA-SOL SS 470P |
| C42 | ★ 87-018-127 | CAP,CERA-SOL SS 470P |
| C101 | ★ 87-015-951 | CAP,ELECT 1-50 |
| C102 | ★ 87-015-951 | CAP,ELECT 1-50 |
| C103 | ★ 87-018-119 | CAP,CERA-SOL SS 100P |
| C104 | ★ 87-018-119 | CAP,CERA-SOL SS 100P |
| C105 | ★ 87-010-379 | CAP,ELECT 22-16 |
| C106 | ★ 87-010-379 | CAP,ELECT 22-16 |
| C107 | ★ 87-018-130 | CAP,CERA-SOL B2OP |
| C108 | ★ 87-018-130 | CAP,CERA-SOL B2OP |
| C109 | ★ 87-018-131 | CAP,CERA-SOL SS 1000P |
| C110 | ★ 87-018-131 | CAP,CERA-SOL SS1000P |
| C151 | ★ 87-010-379 | CAP,ELECT 22-16SME |
| C161 | ★ 87-010-379 | CAP,ELECT 22-16SME |



※ Please order the all parts for this model to Japan.

| Ref. No. | Part No. | Description |
|---|---|---|
| C162 | ★ 87-010-404 | CAP,ELECT 4.7-50SME |
| C163 | ★ 87-010-404 | CAP,ELECT 4.7-50SME |
| C164 | ★ 87-010-236 | CAP,ELECT 1000-10S |
| C181 | ★ 87-010-379 | CAP,ELECT 22-16SME |
| C182 | ★ 87-010-236 | CAP,ELECT 1000-10S |
| C201 | ★ 87-018-132 | CAP,CERA-SOL SS 2200P |
| C202 | ★ 87-018-132 | CAP,CERA-SOL SS 2200P |
| C204 | ★ 87-018-121 | CAP,CERA-SOL SS 150P |
| C205 | ★ 87-010-401 | CAP,ELECT 1-50SME |
| C206 | ★ 87-018-132 | CAP,CERA-SOL SS 2200P |
| C208 | ★ 87-018-132 | CAP,CERA-SOL SS 2200P |
| C209 | ★ 87-018-121 | CAP,CERA-SOL SS 150P |
| C210 | ★ 87-010-401 | CAP,ELECT 1-50SME |
| C211 | ★ 87-010-221 | CAP,ELECT 470-6.3SME |
| C212 | ★ 87-018-005 | CAP,CERA-CYL 4.7P |
| C213 | ★ 87-018-005 | CAP CERA-CYL 4.7P |
| C305 | ★ 87-018-119 | CAP,CERA-SOL SS 100P |
| C306 | ★ 87-018-119 | CAP,CERA-SOL SS 100P |
| C307 | ★ 87-010-379 | CAP,ELECT 22-16SME |
| C308 | ★ 87-010-379 | CAP,ELECT 22-16SME |
| C309 | ★ 87-015-951 | CAP,ELECT LL 1-50V |
| C310 | ★ 87-015-951 | CAP,ELECT LL 1-50V |
| C331 | ★ 87-010-404 | CAP,ELECT 4.7-50SME |
| C355 | ★ 87-010-401 | CAP,ELECT 1-50SME |
| C356 | ★ 87-010-401 | CAP,ELECT 1-50SME |
| C401 | ★ 87-014-081 | CAP,PP 0.01 |
| C402 | ★ 87-010-378 | CAP,ELECT 10-16SME |
| C407 | ★ 87-010-258 | CAP,ELECT 22-35V SME |
| C408 | ★ 87-010-112 | CAP,ELECT 100-16 |
| C411 | ★ 87-018-047 | CAP,CERA-SOL S 0.01Y-16 |
| C503 | ★ 87-010-101 | CAP,ELECT 220-16SME |
| C504 | ★ 87-010-101 | CAP,ELECT 220-16SME |
| C505 | ★ 87-010-404 | CAP,ELECT 4.7-50SME |
| D101 | 87-027-475 | DIODE,ZENER HZ6B1 |
| D201 | 87-020-691 | DIODE 1SS132 |
| D202 | 87-020-691 | DIODE 1SS132 |
| D203 | 87-020-691 | DIODE 1SS132 |
| D204 | 87-020-691 | DIODE 1SS132 |
| D205 | 87-027-286 | DIODE,ZENER HZ5C1 |
| D301 | 87-027-633 | DIODE,ZENER HZ9A2 |
| D302 | 87-052-188 | DIODE 1S188FM |
| D401 | 87-020-691 | DIODE 1SS132 |
| D402 | 87-020-691 | DIODE 1SS132 |
| D403 | 87-020-691 | DIODE 1SS132 |
| D404 | 87-020-123 | DIODE DS446 |
| D405 | 87-020-691 | DIODE 1SS132 |
| D407 | 87-020-691 | DIODE 1SS132 |
| D408 | 87-020-691 | DIODE 1SS132 |
| J451-1 | 87-049-420 | PIN JACK 4P-14,K (LINE OUT L D1) |
| J451-2 | +++ | PIN JACK 4P-14,K (LINE OUT R D1) |
| J451-3 | +++ | PIN JACK 4P-14,K (CD/DAT L) |
| J451-4 | +++ | PIN JACK 4P-14,K (CD/DAT R) |
| J452-1 | 87-049-420 | PIN JACK 4P-14 (LINE OUT L D2) |
| J452-2 | +++ | PIN JACK 4P-14 (LINE OUT R D2) |
| J452-3 | +++ | PIN JACK 4P-14 (LINE IN L D2) |
| J452-4 | +++ | PIN JACK 4P-14 (LINE IN R D2) |
| L1 | ★ 82-202-665 | COIL TRAP 100K |
| L2 | ★ 82-202-665 | COIL TRAP 100K |
| L51 | ★ 82-202-616 | FILTER,LP 100X2 |
| L52 | ★ +++ | FILTER,LP 100X2 |
| L101 | 82-217-602 | FILTER,42W-5012-12 |
| L301 | ★ 82-196-603 | COIL TRAP 100K |
| L302 | ★ 82-196-603 | COIL TRAP 100K |
| L401 | ★ 82-200-628 | COIL OSC 100KEH |

| Ref. No. | Part No. | Description |
|---|---|---|
| L402 | ★ 87-003-051 | COIL 470UH |
| ⚠ R405 | ★ 87-029-067 | RES,FUSIBLE 4.7-1/4W |
| RY401 | 87-045-270 | RELAY G5A-297P |
| SFR1 | ★ 87-021-735 | SFR 220 |
| SFR2 | ★ 87-021-735 | SFR 220 |
| SFR3 | ★ 87-021-739 | SFR 2.2K |
| SFR4 | ★ 87-021-739 | SFR 2.2K |
| SFR5 | ★ 87-021-738 | SFR 1K |
| SFR6 | ★ 87-021-738 | SFR 1K |
| SFR31 | ★ 87-021-735 | SFR 220 |
| SFR32 | ★ 87-021-735 | SFR 220 |
| SFR33 | ★ 87-021-739 | SFR 2.2K |
| SFR34 | ★ 87-021-739 | SFR 2.2K |
| === MAIN-2 CIRCUIT BOARD SECTION === | | |
| PCB-B | * | MAIN-2 CIRCUIT BOARD |
| C502 | ★ 87-010-101 | CAP,ELECT 220-16SME |
| C506 | ★ 87-010-035 | CAP,ELECT 2.2-50 |
| C507 | ★ 87-010-042 | CAP,ELECT 47-25(105) |
| C508 | ★ 87-010-112 | CAP,ELECT 100-16 |
| C509 | ★ 87-010-045 | CAP,ELECT 100-25V(105) |
| C510 | ★ 87-010-379 | CAP,ELECT 22-16SME |
| C511 | ★ 87-010-383 | CAP,ELECT 33-25SME |
| C512 | ★ 87-010-235 | CAP,ELECT 470-16 |
| C513 | ★ 87-010-398 | CAP,ELECT 2200-35VSME |
| C516 | ★ 87-010-048 | CAP,ELECT 220-25(105) |
| C517 | ★ 87-010-237 | CAP,ELECT 1000-16SME |
| C519 | ★ 87-010-398 | CAP,ELECT 2200-35SME |
| C1001 | ★ 87-018-122 | CAP,CERA-SOL SS 180P |
| C1003 | ★ 87-010-380 | CAP,ELECT 47-16SME |
| C1202 | ★ 87-010-380 | CAP,ELECT 47-16SME |
| C1203 | ★ 87-010-380 | CAP,ELECT 47-16SME |
| C1301 | ★ 87-010-429 | CAP,ELECT 680-16VSME |
| C1302 | ★ 87-010-429 | CAP,ELECT 680-16VSME |
| C1401 | ★ 87-010-380 | CAP,ELECT 47-16SME |
| C1402 | ★ 87-010-380 | CAP,ELECT 47-16SME |
| D351 | 87-020-691 | DIODE 1SS132 |
| D502 | 87-020-691 | DIODE 1SS132 |
| D503 | 87-020-691 | DIODE 1SS132 |
| D504 | 87-020-691 | DIODE 1SS132 |
| D505 | 87-027-365 | DIODE S5277B |
| D506 | 87-027-365 | DIODE S5277B |
| D507 | 87-020-025 | DIODE 2B4B41,LC-2 |
| D1001 | 87-020-691 | DIODE 1SS132 |
| D1002 | 87-020-691 | DIODE 1SS132 |
| D1005 | 87-020-691 | DIODE 1SS132 |
| D1006 | 87-020-691 | DIODE 1SS132 |
| D1007 | 87-020-691 | DIODE 1SS132 |
| D1008 | 87-020-691 | DIODE 1SS132 |
| D1012 | 87-027-514 | DIODE,ZENER HZ6B2 |
| D1013 | 87-020-691 | DIODE 1SS132 |
| D1014 | 87-027-514 | DIODE,ZENER HZ6B2 |
| D1015 | 87-020-691 | DIODE 1SS132 |
| D1016 | 87-020-691 | DIODE 1SS132 |
| D1101 | 87-020-691 | DIODE 1SS132 |
| D1301 | 87-020-123 | DIODE DS446 |
| D1302 | 87-020-123 | DIODE DS446 |
| D1401 | 87-020-691 | DIODE 1SS132 |
| D1402 | 87-020-691 | DIODE 1SS132 |
| D1601 | 87-020-691 | DIODE 1SS132 |
| D1602 | 87-020-691 | DIODE 1SS132 |
| D1603 | 87-020-691 | DIODE 1SS132 |
| D1604 | 87-020-691 | DIODE 1SS132 |

※ Please order the all parts for this model to Japan.

| Ref. No. | Part No. | Description |
|---|---|---|
| D1605 | 87-020-691 | DIODE 1SS132 |
| D1606 | 87-020-691 | DIODE 1SS132 |
| D1607 | 87-020-691 | DIODE 1SS132 |
| D1608 | 87-020-691 | DIODE 1SS132 |
| D1609 | 87-020-691 | DIODE 1SS132 |
| D1610 | 87-020-691 | DIODE 1SS132 |
| D1611 | 87-020-691 | DIODE 1SS132 |
| D1612 | 87-020-691 | DIODE 1SS132 |
| D1614 | 87-020-691 | DIODE 1SS132 |
| D1615 | 87-020-691 | DIODE 1SS132 |
| D1701 | 87-020-691 | DIODE 1SS132 |
| D1702 | 87-020-691 | DIODE 1SS132 |
| D1703 | 87-020-691 | DIODE 1SS132 |
| D1704 | 87-020-691 | DIODE 1SS132 |
| ⚠F2 | 87-035-331 | FUSE,GHS-1.25A (U ONLY) |
| L1001 ★ | 82-202-624 | COIL OSC LC6520H |
| R523 ★ | 87-025-440 | RES,MFO 1W-330 |
| R524 ★ | 87-025-440 | RES,MFO 1W-330 |
| R1014 ★ | 82-202-652 | RES,ARRAY 47KX9P |
| R1015 ★ | +++ | RES,ARRAY 47KX9P |
| R1028 ★ | +++ | RES,ARRAY 47KX9P |
| R1029 ★ | +++ | RES,ARRAY 47KX9P |
| R1030 ★ | +++ | RES,ARRAY 47KX9P |
| R1031 ★ | +++ | RES,ARRAY 47KX9P |
| R1032 ★ | +++ | RES,ARRAY 47KX9P |
| R1033 ★ | +++ | RES,ARRAY 47KX9P |
| R1020 ★ | 82-202-654 | RES,ARRAY 10KX9P |
| R1021 ★ | +++ | RES,ARRAY 10KX9P |
| R1022 ★ | +++ | RES,ARRAY 10KX9P |
| R1023 ★ | +++ | RES,ARRAY 10KX9P |
| R1024 ★ | +++ | RES,ARRAY 10KX9P |
| R1025 ★ | +++ | RES,ARRAY 10KX9P |
| R1026 ★ | +++ | RES,ARRAY 10KX9P |
| R1027 ★ | +++ | RES,ARRAY 10KX9P |
| R1034 ★ | 82-202-653 | RES,ARRAY 47KX8P |
| R1035 ★ | +++ | RES,ARRAY 47KX8P |
| R1036 ★ | +++ | RES,ARRAY 47KX8P |
| R1037 ★ | +++ | RES,ARRAY 47KX8P |
| R1038 ★ | +++ | RES,ARRAY 47KX8P |
| R1039 ★ | +++ | RES,ARRAY 47KX8P |
| R1040 ★ | +++ | RES,ARRAY 47KX8P |
| R1044 ★ | 82-202-632 | RES,ARRAY 4.7KX5P |
| R1045 ★ | +++ | RES,ARRAY 4.7KX5P |
| R1046 ★ | +++ | RES,ARRAY 4.7KX5P |
| R1047 ★ | +++ | RES,ARRAY 4.7KX5P |
| R1301 ★ | 87-025-437 | RES,MFO 82-1W |
| R1304 ★ | 87-025-437 | RES,MFO 82-1W |
| SFR1401★ | 87-021-864 | SFR 10K |
| SFR1402★ | 87-021-865 | SFR 22K |

=== H.P.AMP CIRCUIT BOARD SECTION ===

| | | |
|---|---|---|
| PCB-C | * | H.P.AMP CIRCUIT BOARD |
| C251 ★ | 87-010-401 | CAP,ELECT 1-50SME |
| C252 ★ | 87-010-401 | CAP,ELECT 1-50SME |
| C253 ★ | 87-010-401 | CAP,ELECT 1-50SME |
| C254 ★ | 87-010-401 | CAP,ELECT 1-50SME |
| C255 ★ | 87-010-235 | CAP,ELECT 470-16 |
| C257 ★ | 87-010-101 | CAP,ELECT 220-16SME |
| C258 ★ | 87-010-101 | CAP,ELECT 220-16SME |

=== METER CONTROL CIRCUIT BOARD SECTION ===

| | | |
|---|---|---|
| PCB-D | * | METER CONTROL CIRCUIT BOARD |
| C265 ★ | 87-010-545 | CAP,ELECT 0.22-50SME |
| C266 ★ | 87-010-545 | CAP,ELECT 0.22-50SME |
| D261 | 87-020-691 | DIODE 1SS132 |
| VR401 | 82-202-623 | VOLUME 250KB(D2 BIAS FINE NOR./CO) |

=== DISPLAY CIRCUIT BOARD SECTION ===

| | | |
|---|---|---|
| PCB-E | * | DISPLAY CIRCUIT BOARD |
| C351 ★ | 87-010-265 | CAP,ELECT 33-16V (USL) |
| C352 ★ | 87-010-265 | CAP,ELECT 33-16V (USL) |
| C1901 ★ | 87-018-119 | CAP,CERA-SOL SS 100P |
| D1817 | 87-020-691 | DIODE,1SS132 |
| D1818 | 87-020-691 | DIODE,1SS132 |
| D1901 | 87-027-393 | DIODE,ZENER HZ4C2 |
| FL1901 | 82-217-603 | FL,FG116P9 (COUNTER) |
| FL1902 | 81-199-635 | FL,BG-232ZK 12DOT (PEAK PROGRAM LEVEL METER) |
| LED367 | 87-027-542 | LED,LN217RP (D1 DOLBY NR C) |
| LED368 | 87-027-543 | LED,LN317GP (D1 DOLBY NR B) |
| LED369 | 87-027-542 | LED,LN217RP (D2 DOLBY NR C) |
| LED370 | 87-027-543 | LED,LN317GP (D2 DOLBY NR B) |
| LED401 | 87-027-637 | LED,TLG226 (D2 ADMS) |
| LED1811 | 87-001-138 | LED,SLP481C50,Y (SOURCE) |
| LED1812 | 87-001-122 | LED,SLP381C50,G (TAPE) |
| LED1813 | 87-001-137 | LED,SLP981C50,R (SYNC DUB,NORM) |
| LED1814 | 87-001-137 | LDE,SLP981C50,R (SYNC DUB,HIGH) |
| R358 ★ | 87-025-081 | REG,MFO 2W-150 |
| S1817 | 87-031-893 | TACT SW (SYNC DUB,NORM) |
| S1818 | 87-031-893 | TACT SW (SYNC DUB,HIGH) |
| S1819 | 87-031-893 | TACT SW (MONITOR) |
| S1829 | 87-031-893 | TACT SW (D1 COUNTER RESET) |
| S1830 | 87-031-893 | TACT SW (D2 COUNTER RESET) |

=== DOLBY HX-2 CIRCUIT BOARD SECTION ===

| | | |
|---|---|---|
| PCB-F | * | DOLBY HX-2 CIRCUIT BOARD |
| C81 ★ | 87-010-421 | CAP,ELECT 4.7-50SRE |
| C82 ★ | 87-010-421 | CAP,ELECT 4.7-50SRE |
| C83 ★ | 87-010-401 | CAP,ELECT 1-50SME |
| C84 ★ | 87-010-401 | CAP,ELECT 1-50SME |
| C85 ★ | 87-018-128 | CAP,CERA-SOL 560P |
| C86 ★ | 87-018-128 | CAP,CERA-SOL 560P |
| C901 ★ | 87-018-123 | CAP,CERA-SOL SS 220P |
| C902 ★ | 87-018-123 | CAP,CERA-SOL SS 220P |
| C903 ★ | 87-014-173 | CAP,PP 1000P-G |
| C904 ★ | 87-014-173 | CAP,PP 1000P-G |
| C907 ★ | 87-018-121 | CAP,CERA-SOL SS 150P |
| C908 ★ | 87-018-121 | CAP,CERA-SOL SS 150P |
| C911 ★ | 87-018-131 | CAP,CERA-SOL SS 1000P |
| C912 ★ | 87-018-131 | CAP,CERA-SOL SS 1000P |
| C913 ★ | 87-018-131 | CAP,CERA-SOL SS 1000P |
| C914 ★ | 87-018-131 | CAP,CERA-SOL SS 1000P |
| C915 ★ | 87-018-131 | CAP,CERA-SOL SS 1000P |
| C916 ★ | 87-018-131 | CAP,CERA-SOL SS 1000P |
| C919 ★ | 87-018-047 | CAP,CERA-SOL S 0.01Y-16 |
| C920 ★ | 87-010-382 | CAP,ELECT 22-25SME |
| D901 | 87-020-156 | DIODE MC931 |
| D902 | 87-020-156 | DIODE MC931 |
| D903 | 87-027-026 | DIODE,ZENER HZ-5C1 |
| L61 ★ | 82-196-603 | COIL TRAP 100K |
| L62 ★ | 82-196-603 | COIL TRAP 100K |
| L63 ★ | 87-003-129 | COIL 6.8MMHJ |
| L64 ★ | 87-003-129 | COIL 6.8MMHJ |
| L65 ★ | 87-003-125 | COIL 3.3MMHJ |
| L66 ★ | 87-003-125 | COIL 3.3MMHJ |
| L901 ★ | 82-202-619 | COIL HX 100K,AM |
| L902 ★ | 82-202-619 | COIL HX 100K,AM |



※ Please order the all parts for this model to Japan.

| Ref. No. | Part No. | Description |
|---|---|---|
| SFR61 ★ | 87-021-864 | SFR 10K |
| SFR62 ★ | 87-021-864 | SFR 10K |
| SFR901★ | 87-021-868 | SFR 100K |
| SFR902★ | 87-021-868 | SFR 100K |

=== KEY SWITCH-1 CIRCUIT BOARD SECTION ===

| | | |
|---|---|---|
| PCB-G | * | KEY SWITCH-1 CIRCUIT BOARD |
| D1801 | 87-020-691 | DIODE 1SS132 |
| D1803 | 87-020-691 | DIODE 1SS132 |
| D1805 | 87-020-691 | DIODE 1SS132 |
| D1807 | 87-020-691 | DIODE 1SS132 |
| LED371 | 87-001-122 | LED,SLP381C50,G (D1 DIRECT▶) |
| LED372 | 87-001-122 | LED,SLP381C50,G (D1 DIRECT◀) |
| LED1804 | 87-001-122 | LED,SLP381C50,G (D1 PLAY) |
| LED1805 | 87-001-122 | LED,SLP381C50,G (D1 REV PLAY) |
| S1801 | 87-031-893 | TACT SW (D1 MS◀◀) |
| S1803 | 87-031-893 | TACT SW (D1 REV◀) |
| S1805 | 87-031-893 | TACT SW (D1 FWD▶) |
| S1807 | 87-031-893 | TACT SW (D1 MS▶▶) |

=== SWITCH-1 CIRCUIT BOARD SECTION ===

| | | |
|---|---|---|
| PCB-H | * | SWITCH-1 CIRCUIT BOARD |
| D1804 | 87-020-691 | DIODE,1SS132 |
| D1806 | 87-020-691 | DIODE,1SS132 |
| D1824 | 87-020-691 | DIODE,1SS132 |
| LED1802 | 87-001-138 | LED,SLP481C50,Y (D1 PAUSE) |
| S1804 | 87-031-893 | TACT SW (D1 STOP) |
| S1806 | 87-031-893 | TACT SW (D1 PAUSE) |
| S1824 | 87-036-032 | SLIDE SW (D1 REVERSE MODE) |
| S1826 | 87-036-032 | SLIDE SW (D1 DOLBY B-C NR) |

=== KEY SWITCH-2 CIRCUIT BOARD SECTION ===

| | | |
|---|---|---|
| PCB-I | * | KEY SWITCH-2 CIRCUIT BOARD |
| D1809 | 87-020-691 | DIODE,1SS132 |
| D1810 | 87-020-691 | DIODE,1SS132 |
| D1813 | 87-020-691 | DIODE,1SS132 |
| D1815 | 87-020-691 | DIODE,1SS132 |
| D1826 | 87-020-691 | DIODE,1SS132 |
| D1827 | 87-020-691 | DIODE,1SS132 |
| LED1806 | 87-001-137 | LED,SLP981C50,R (D2◀◀MS) |
| LED1807 | 87-001-122 | LED,SLP381C50,G (D2▶▶MS) |
| LED1816 | 87-001-137 | LED,SLP981C50,R (D2◀◀MS) |
| LED1817 | 87-001-122 | LED,SLP381C50,G (D2▶▶MS) |
| S1809 | 87-031-893 | TACT SW (D2◀◀MS) |
| S1810 | 87-031-893 | TACT SW (D2 REC) |
| S1813 | 87-031-893 | TACT SW (D2▶PLAY) |
| S1815 | 87-031-893 | TACT SW (D2▶▶MS) |

=== SWITCH-2 CIRCUIT BOARD SECTION ===

| | | |
|---|---|---|
| PCB-J | * | SWITCH-2 CIRCUIT BOARD |
| D1812 | 87-020-691 | DIODE,1SS132 |
| D1814 | 87-020-691 | DIODE,1SS132 |
| D1816 | 87-020-691 | DIODE,1SS132 |
| LED1807 | 87-001-138 | LED,SLP481C50,Y (D2 PAUSE) |
| LED1810 | 87-001-137 | LED,SLP981C50,R (D2 REC MUTE) |
| S1812 | 87-031-893 | TACT SW (D2 STOP) |
| S1814 | 87-031-893 | TACT SW (D2 PAUSE) |
| S1816 | 87-031-893 | TACT SW (D2 REC MUTE) |
| S1827 | 87-036-032 | SLIDE SW (D2 DOLBY B-C NR) |

=== SWITCH-3 CIRCUIT BOARD SECTION ===

| | | |
|---|---|---|
| PCB-K | * | SWITCH-3 CIRCUIT BOARD |
| D1820 | 87-020-691 | DIODE,1SS132 |
| S101 | 87-036-033 | SLIDE SW (INPUT) |
| S1820 | 87-036-033 | SLIDE SW (BLANK SKIP) |

=== SWITCH-4 CIRCUIT BOARD SECTION ===

| | | |
|---|---|---|
| PCB-L | * | SWITCH-4 CIRCUIT BOARD |
| D1825 | 87-020-691 | DIODE,1SS132 |
| S1825 | 82-191-657 | SLIDE SW (TIMER) |
| S1828 | 82-191-657 | SLIDE SW (PHONES) |

=== POWER SWITCH CIRCUIT BOARD SECTION ===

| | | |
|---|---|---|
| ⚠PCB-M | * | POWER SWITCH CIRCUIT BOARD |
| ⚠C521 | 87-019-110 | SPARK KILLER,0.01 (H ONLY) |
| ⚠C521 | 87-019-112 | SPARK KILLER,0.001 (U,E,K,Z ONLY) |
| ⚠S1 | 87-036-115 | PUSH SW (POWER) |

=== VOLUME-1 CIRCUIT BOARD SECTION ===

| | | |
|---|---|---|
| PCB-N | * | VOLUME-1 CIRCUIT BOARD |
| D102 | 88-052-188 | DIODE,1SS188FM |
| VR301 | 82-217-604 | VOLUME,10KAX2 (REC LEVEL) |

=== VOLUME-2 CIRCUIT BOARD SECTION ===

| | | |
|---|---|---|
| PCB-O | * | VOLUME-2 CIRCUIT BOARD |
| VR401 | 82-202-623 | VOLUME,250KB (BIAS FINE) |

=== H.P.JACK CIRCUIT BOARD SECTION ===

| | | |
|---|---|---|
| PCB-P | * | H.P.JACK CIRCUIT BOARD |
| J251 | 87-049-827 | JACK (PHONES) |

=== RELAY CIRCUIT BOARD SECTION ===

| | | |
|---|---|---|
| PCB-Q | * | RELAY CIRCUIT BOARD |
| D1819 | 87-020-691 | DIODE,1SS132 |

=== TR CIRCUIT BOARD SECTION ===

| | | |
|---|---|---|
| PCB-R | * | TR CIRCUIT BOARD |

=== FUSE CIRCUIT BOARD SECTION ===

| | | |
|---|---|---|
| ⚠PCB-S | * | FUSE CIRCUIT BOARD |
| ⚠ | 87-033-147 | FUSE CLAMP |
| ⚠F1 | 87-035-356 | FUSE,T250MMA (E,K,Z ONLY) |
| ⚠F1 | 87-035-294 | FUSE,500MMA (U ONLY) |
| ⚠F1 | 87-035-249 | FUSE,1A (H ONLY) |

=== DECK CIRCUIT BOARD SECTION ===

| | | |
|---|---|---|
| PCB-T | * | DECK CIRCUIT BOARD (D1) |
| S1102 | 87-036-039 | PUSH SW D2A2120-4 (CO,D1) |
| S1103 | 87-036-040 | PUSH SW D2A2110-3 (CAST,D1) |
| S1106 | 87-036-039 | PUSH SW D2A2120-4 (DIRE,D1) |
| SFR110★ | 87-021-966 | SFR 4.7K |
| SFR110★ | 87-021-966 | SFR 4.7K |
| SOL110 | 86-535-611 | SOLENOID X-3 (PLAY,D1) |
| SOL110 | 86-535-612 | SOLENOID X-3 (FR,D1) |

=== SENSOR CIRCUIT BOARD SECTION ===

| | | |
|---|---|---|
| PCB-U | * | SENSOR CIRCUIT BOARD (D1) |
| CP1101 | 87-020-755 | PHOTO SENSOR SPI-900-0102(D1) |

=== AUTO STOP CIRCUIT BOARD SECTION ===

| | | |
|---|---|---|
| PCB-V | 81-505-605 | AUTO STOP CIRCUIT BOARD (D2) |
| CP1151 | 87-027-644 | PHOTO SENSOR NJL-5141EA |

=== DOLBY NR-1 CIRCUIT BOARD SECTION ===

| | | |
|---|---|---|
| | 87-030-114 | DOLBY UNIT HA12088GN (W/PCB-W) |

※ Please order the all parts for this model to Japan

| Ref. No. | Part No. | Description |
|---|---|---|
| | | ☲☲☲ DOLBY NR-2 CIRCUIT BOARD SECTION ☲☲☲ |
| | 87-030-114 | DOLBY UNIT HA12088GN (W/PCB-X) |
| | | ☲☲☲ DOLBY NR-3 CIRCUIT BOARD SECTION ☲☲☲ |
| | 87-030-114 | DOLBY UNIT HA12088GN (W/PCB-Y) |
| | | ☲☲☲ MISCELLANEOUS ☲☲☲ |
| ⚠ | ★ 87-034-732 | AC CORD (H ONLY) |
| ⚠ | ★ 87-034-731 | AC CORD (U ONLY) |
| ⚠ | ★ 82-034-736 | AC CORD (E,Z ONLY) |
| ⚠ | ★ 87-034-734 | AC CORD (K ONLY) |
| ⚠ | ★ 87-085-184 | AC CORD BUSHING (H ONLY) |
| ⚠ | ★ 87-085-189 | AC CORD BUSHING (U ONLY) |
| ⚠ | ★ 87-085-185 | AC CORD BUSHING (E,K,Z ONLY) |
| CON2 | ★ 82-200-623 | CONNECTOR 9P ASSY RH-EH |
| CON3 | ★ 82-200-621 | CONNECTOR 6P ASSY PH |
| EH | ★ 87-046-288 | E HEAD (D2) |
| LED501 | ★ 87-027-944 | LED SLF-301C (D1 LIGHT) |
| LED502 | ★ 87-027-944 | LED,SLF-301C (D2 LIGHT) |
| M1101 | 87-045-235 | MOTOR MMA6B2LW (D1) |
| M1151 | 81-505-604 | REEL MOTOR (D2) |
| M1152 | 87-045-235 | MOTOR MMA6B2LW (D2) |
| PH | 87-046-297 | PB HEAD (D1) |
| RPH | 87-046-194 | RP HEAD HADKH27001 (D2) |
| ⚠SW1 | 87-031-586 | ROTARY SW (AC VOLT.) (H ONLY) |
| S1152 | 81-505-601 | LEAF SW GEAR CAM (PLAY,D2) |
| S1153 | 81-505-601 | LEAF SW GEAR CAM (PAUSE,D2) |
| S1154 | 81-505-607 | LEAF SW (CAST,D2) |
| S1155 | 81-505-607 | LEAF SW (ENA A,D2) |
| S1157 | 81-505-607 | LEAF SW (MT,D2) |
| S1158 | 81-505-607 | LEAF SW (CO,D2) |
| SOL115 | 81-505-603 | SOLENOID 9ME-A (PLAY,D2) |
| SOL115 | 81-505-603 | SOLENOID 9ME-A (PAUSE,D2) |
| ⚠T501 | ★ 82-104-648 | POWER TRANSFORMER (H ONLY) |
| ⚠T501 | ★ 82-104-645 | POWER TRANSFORMER (U ONLY) |
| ⚠T501 | ★ 82-104-646 | POWER TRANSFORMER (E,Z ONLY) |
| ⚠T501 | ★ 82-104-647 | POWER TRANSFORMER (K ONLY) |

**Combination circuit board A 82-217-605**

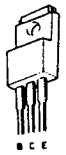
| | |
|---|---|
| **PCB–A** | **82-217-606** |
| **PCB–B** | **82-217-607** |
| **PCB–C** | **82-217-609** |
| **PCB–D** | **82-217-610** |
| **PCB–R** | **82-217-608** |

**Combination circuit board B 82-217-611**

| | |
|---|---|
| **PCB–E** | **82-217-620** |
| **PCB–F** | **82-217-623** |
| **PCB–G** | **82-217-612** |
| **PCB–H** | **82-217-613** |
| **PCB– I** | **82-217-615** |
| **PCB–J** | **82-217-616** |
| **PCB–K** | **82-217-614** |
| **PCB–L** | **82-217-617** |
| **PCB–M** | **82-217-618** |
| **PCB–N** | **82-217-621** |
| **PCB–O** | **82-217-622** |
| **PCB–P** | **82-217-619** |
| **PCB–Q** | **82-217-640** |
| **PCB–S** | **82-217-624** |

**Combination circuit board C 86-535-601**

| | |
|---|---|
| **PCB–T** | **86-535-602** |
| **PCB–U** | **86-535-603** |

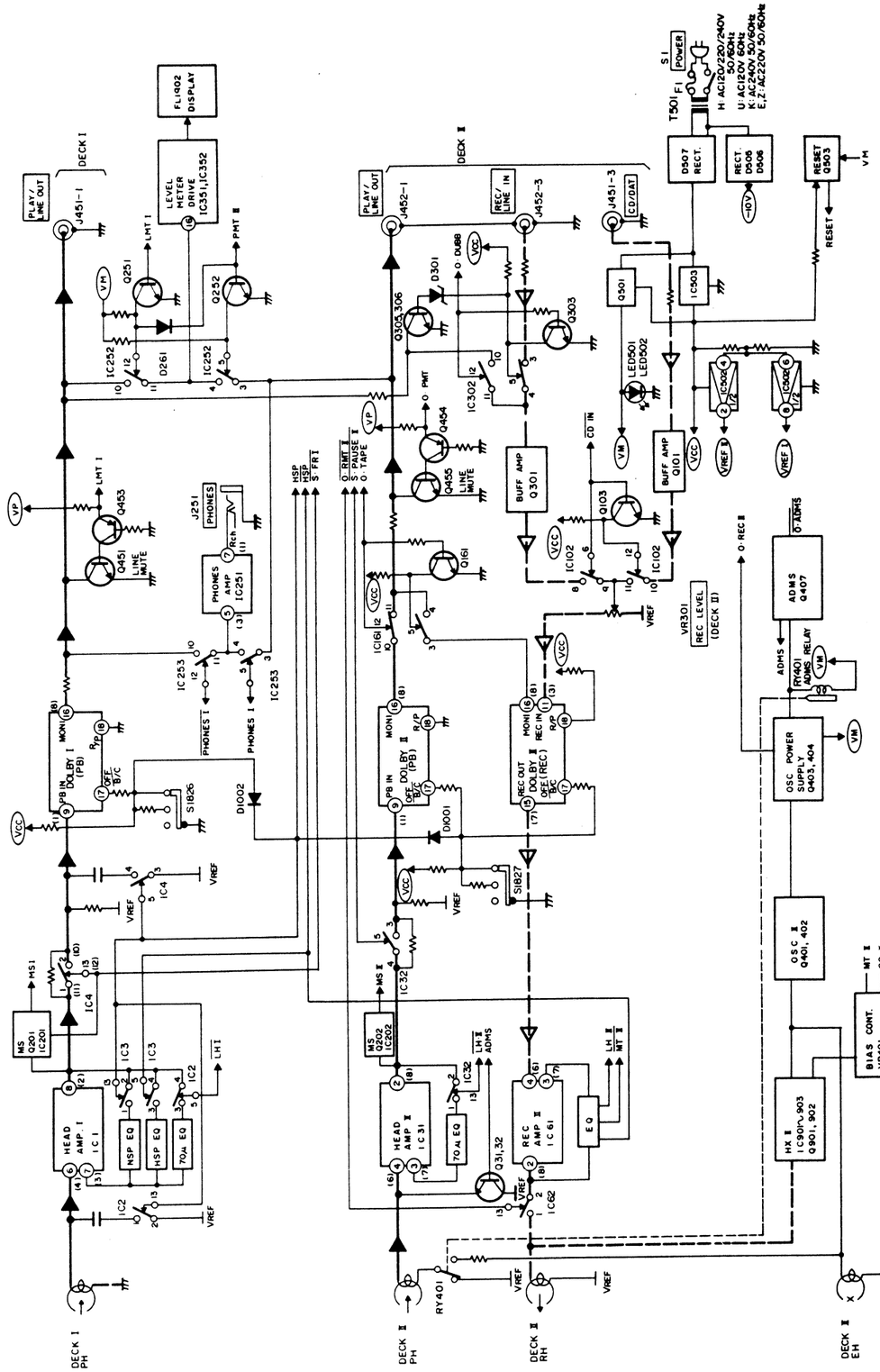


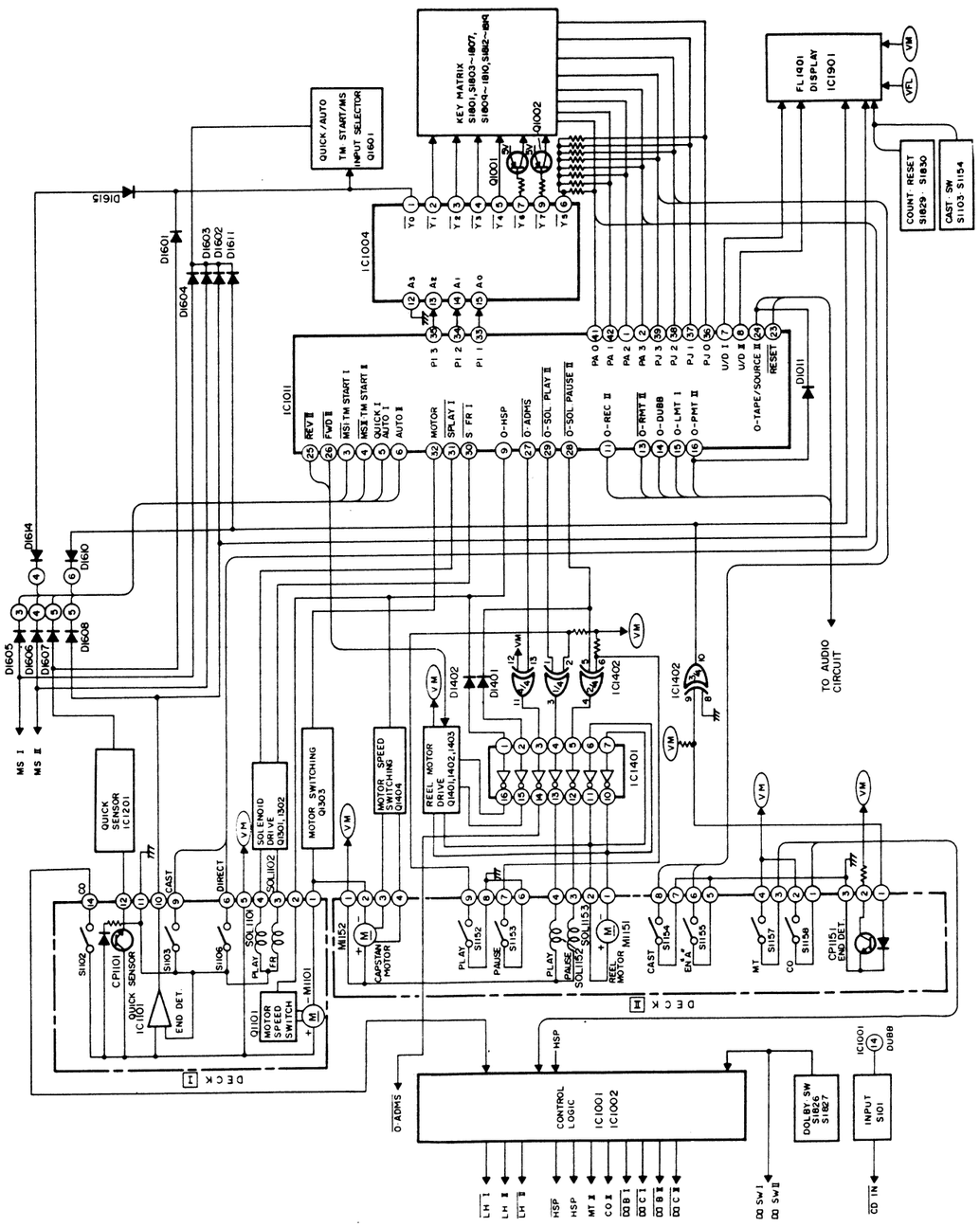

**2SD1275**
**2SD1276**

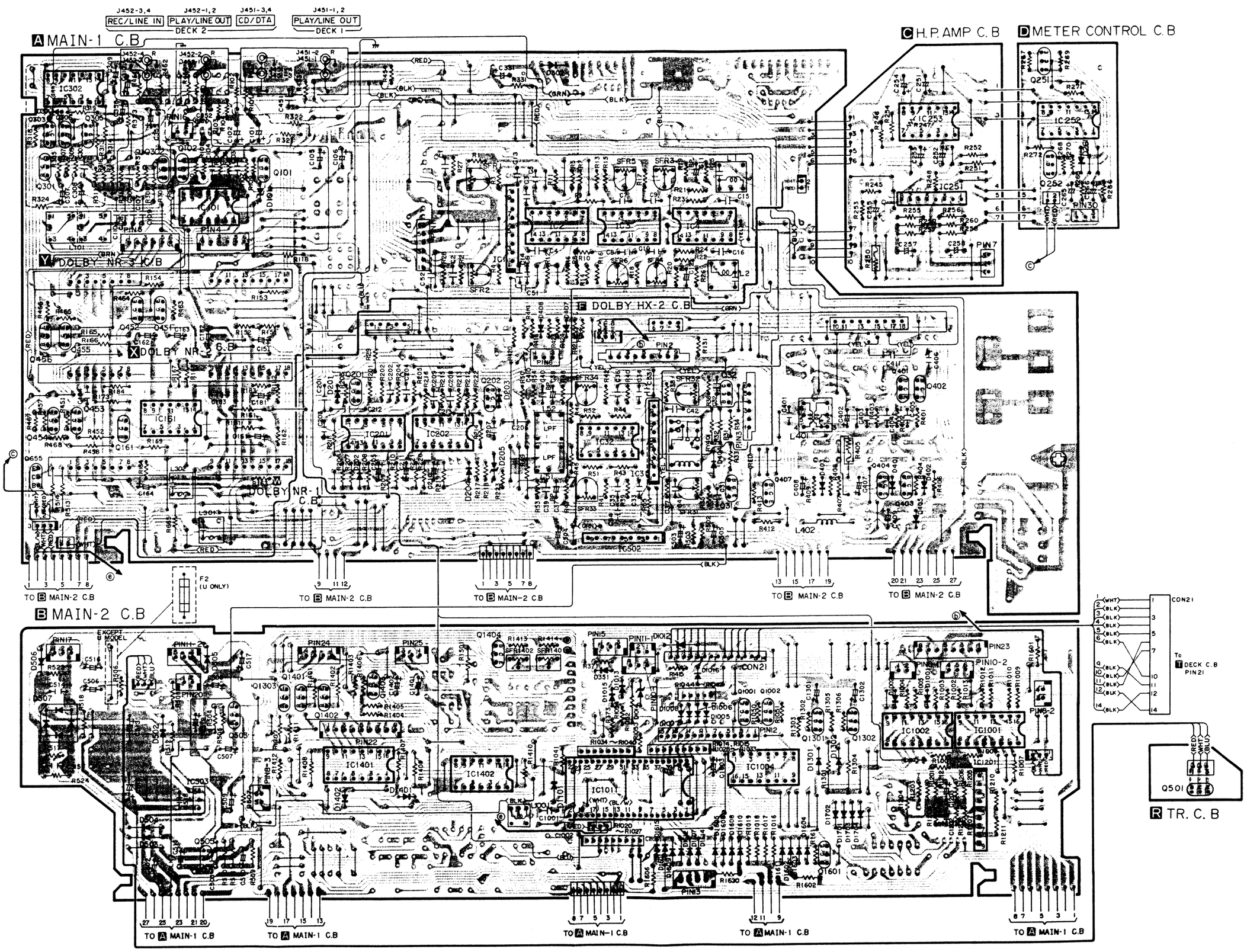
**DTA114**

**2SA952**
**2SA1015**
**2SC1815**
**2SC2001**
**2SC2120**
**2SC2240**
**2SD1111**
**2SD1302**

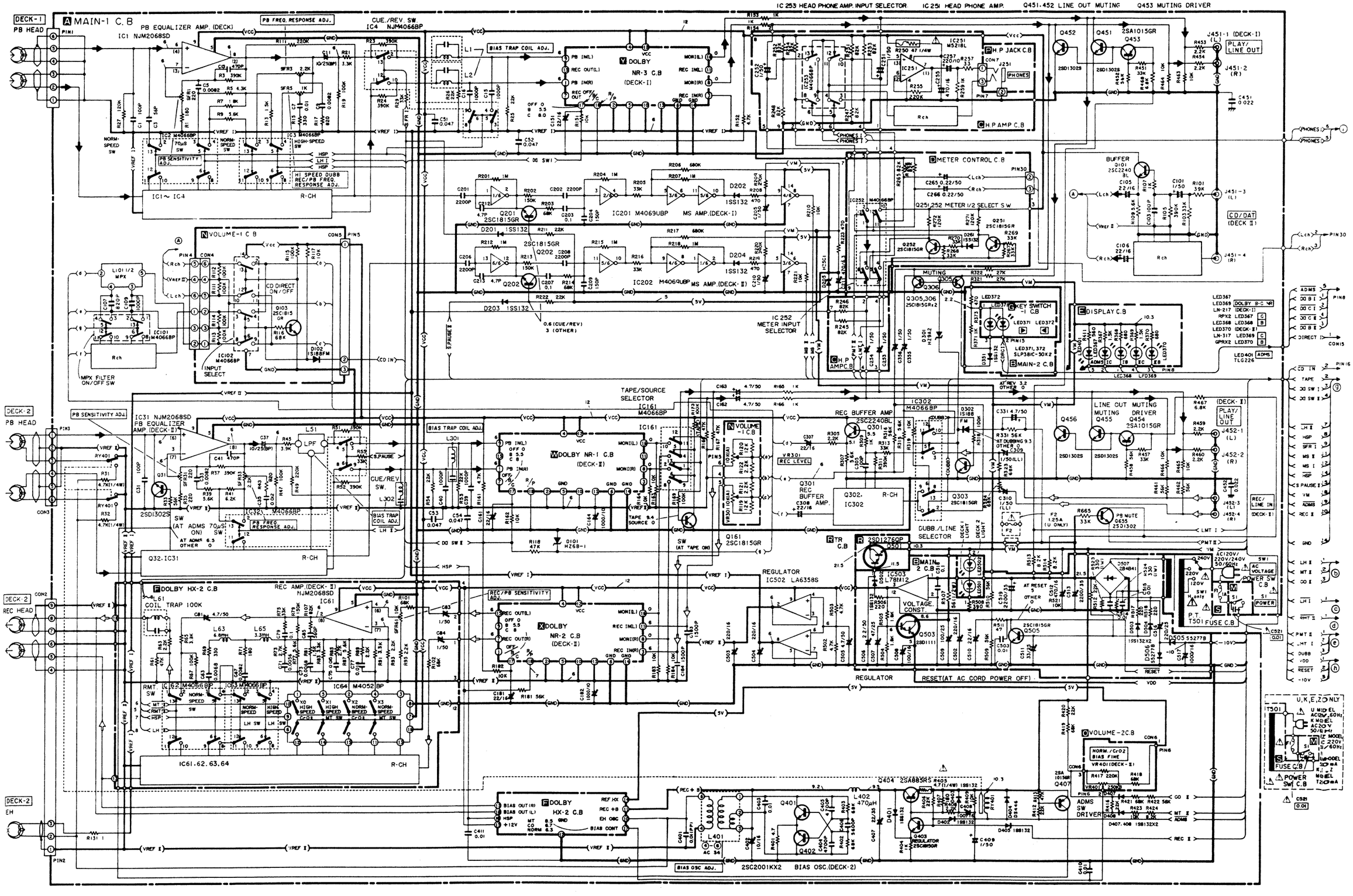
# BLOCK DIAGRAM



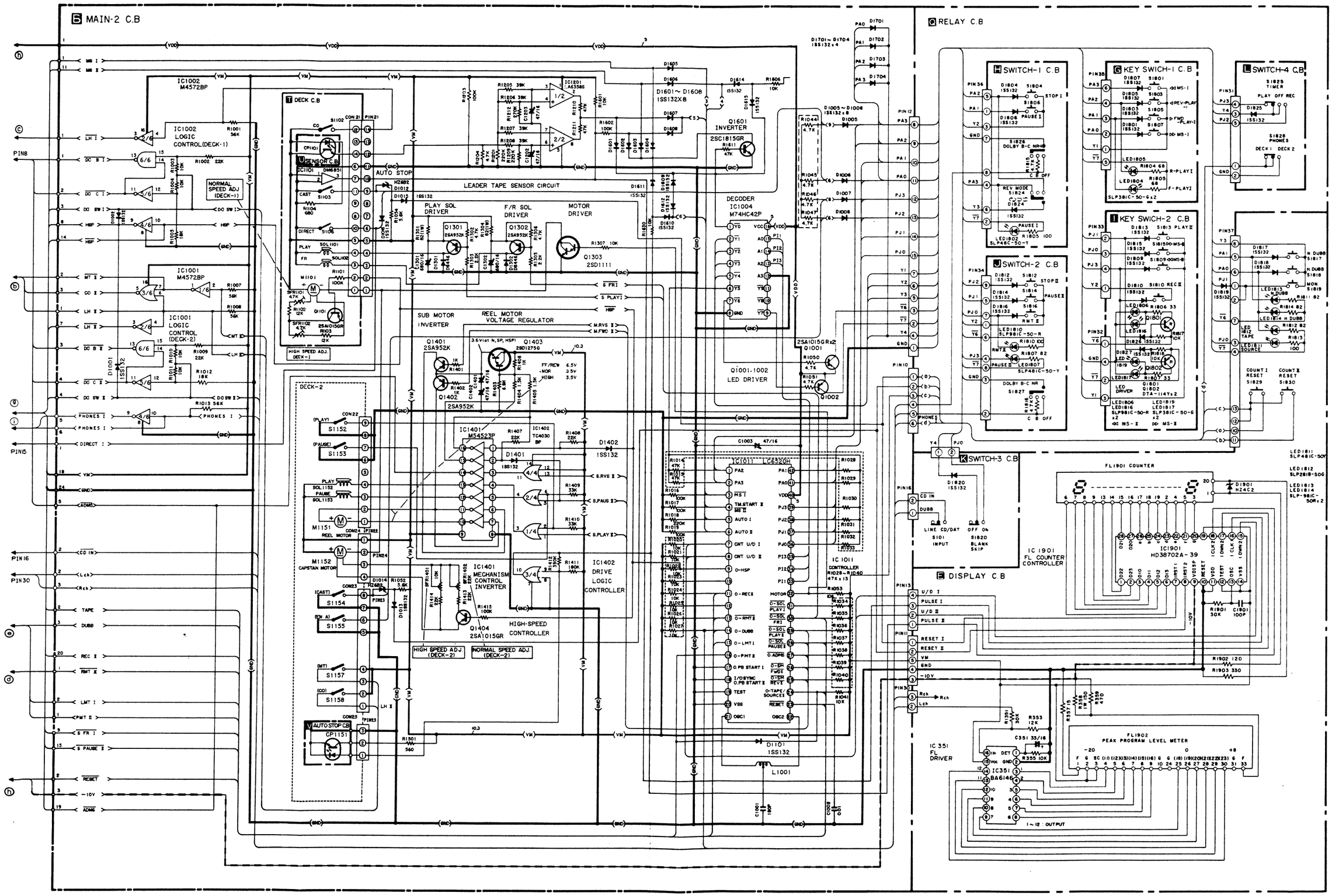



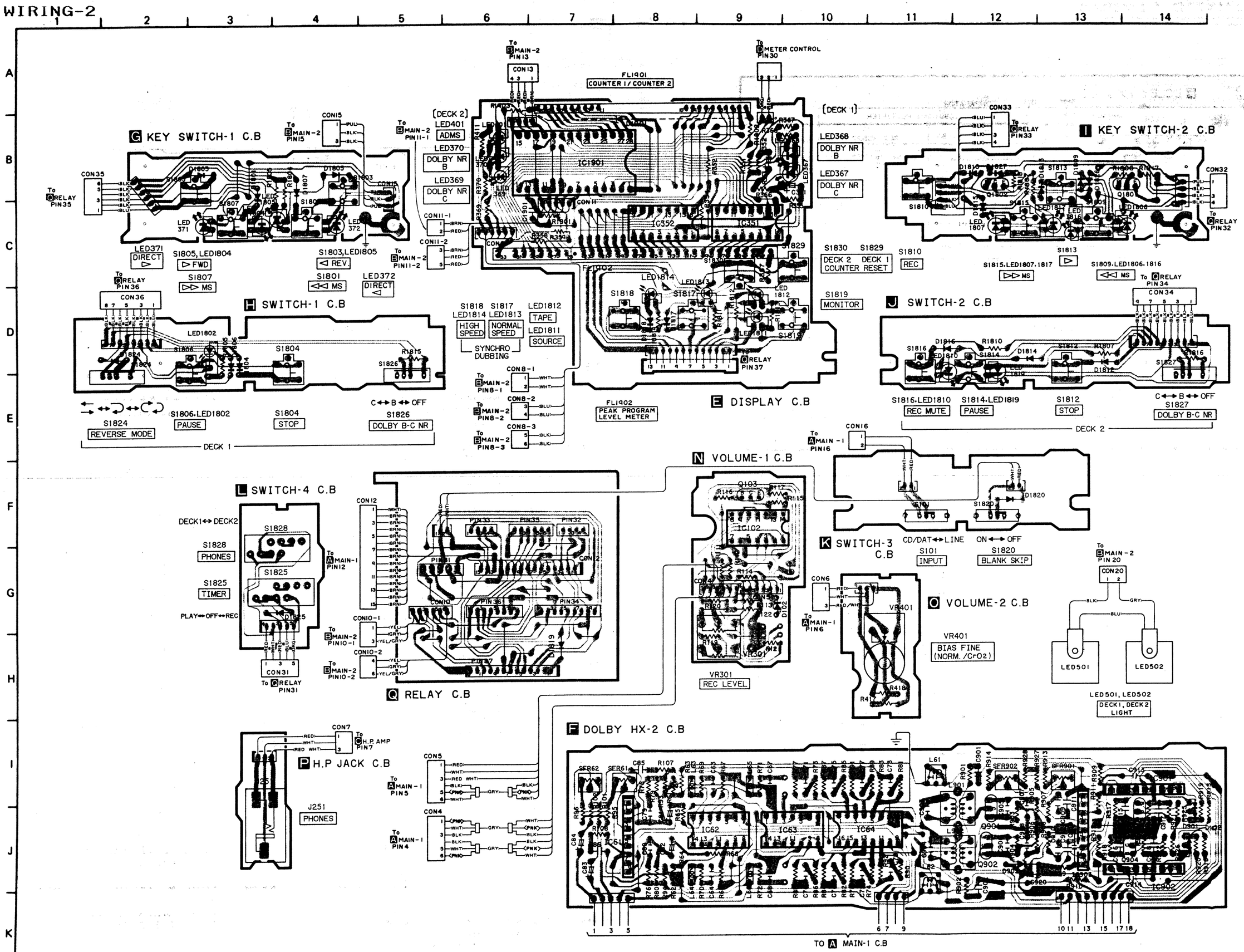

J452-3,4 REC/LINE IN
J452-1,2 PLAY/LINE OUT DECK 2
J451-3,4 CD/DTA
J451-1,2 PLAY/LINE OUT DECK 1
A MAIN-1 C.B
C H.P. AMP C.B
D METER CONTROL C.B
Y DOLBY NR-3 K/B
X DOLBY NR-2 C.B
F DOLBY HX-2 C.B
W DOLBY NR-1 C.B
TO B MAIN-2 C.B
F2 (U ONLY)
B MAIN-2 C.B
EXCEPT U MODEL
TO A MAIN-1 C.B
CON21
To T DECK C.B PIN21
Q501
R TR. C.B

# SCHEMATIC DIAGRAM-1

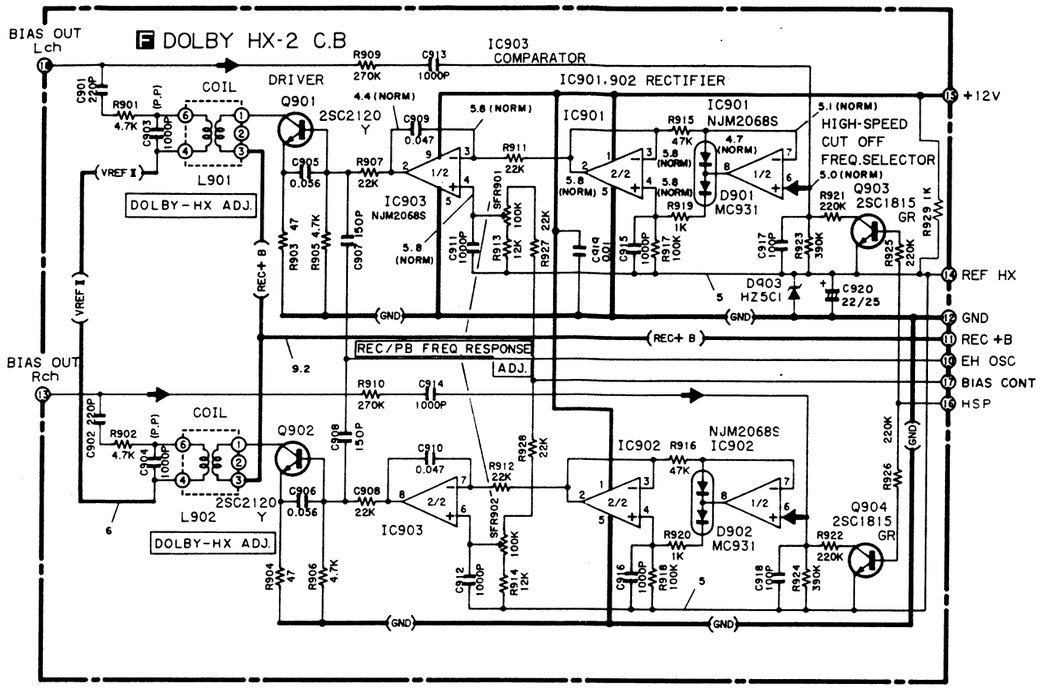


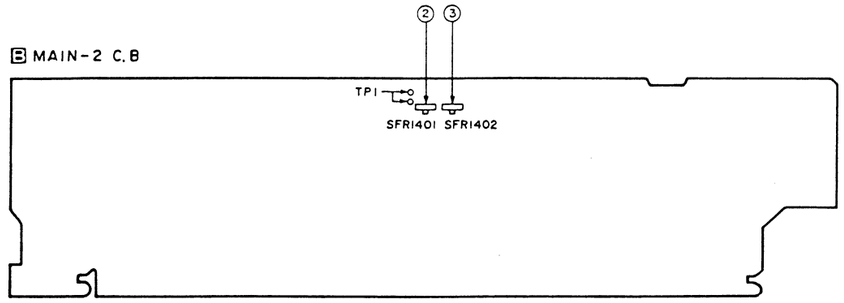
# SCHEMATIC DIAGRAM-2



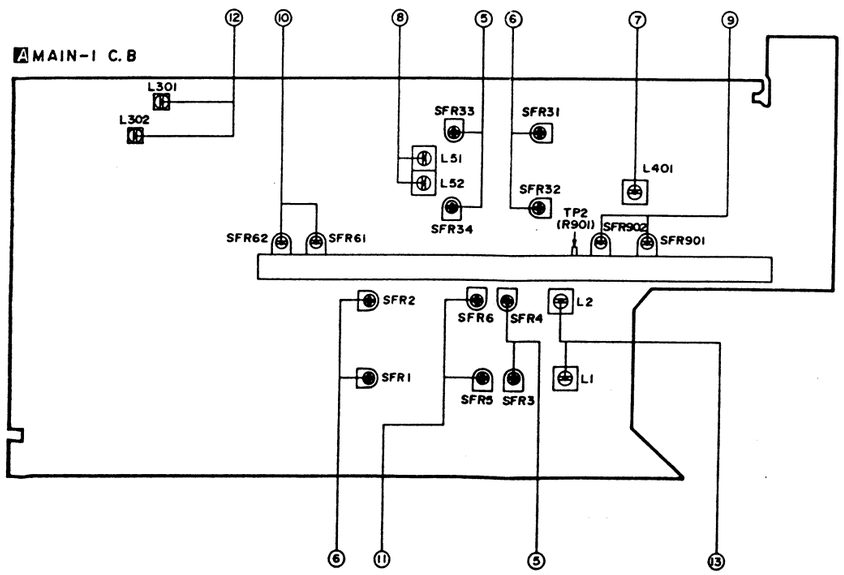

G KEY SWITCH-1 C.B
CON35
To Q RELAY PIN35
CON15
To B MAIN-2 PIN15
To B MAIN-2 PIN11-1
To B MAIN-2 PIN11-2
CON11-1
CON11-2
LED371 DIRECT ▷
S1805, LED1804 ▷ FWD
S1807 ▷▷ MS
S1803, LED1805 ◁ REV
S1801 ◁◁ MS
LED372 DIRECT ◁
H SWITCH-1 C.B
To Q RELAY PIN36
CON36
LED1802
S1824 REVERSE MODE
S1806, LED1802 PAUSE
S1804 STOP
S1826 DOLBY B-C NR
C ↔ B ↔ OFF
DECK 1
(DECK 2)
LED401 ADMS
LED370 DOLBY NR B
LED369 DOLBY NR C
FLI901 COUNTER 1 / COUNTER 2
IC1901
IC352
IC351
FLI902 PEAK PROGRAM LEVEL METER
S1818 S1817 LED1812
LED1814 LED1813 LED1811
HIGH SPEED
NORMAL SPEED
TAPE
SOURCE
SYNCHRO DUBBING
S1829
S1830 DECK 2 COUNTER RESET
S1829 DECK 1 COUNTER RESET
S1810 REC
S1819 MONITOR
To B MAIN-2 PIN13
To B METER CONTROL PIN30
To Q RELAY PIN37
E DISPLAY C.B
(DECK 1)
LED368 DOLBY NR B
LED367 DOLBY NR C
I KEY SWITCH-2 C.B
CON33
To Q RELAY PIN33
CON32
To Q RELAY PIN32
S1813 ▷
S1815, LED1807, 1817 ▷▷ MS
S1809, LED1806, 1816 ◁◁ MS
J SWITCH-2 C.B
CON34
To Q RELAY PIN34
S1816, LED1810 REC MUTE
S1814, LED1819 PAUSE
S1812 STOP
S1827 DOLBY B-C NR
C ↔ B ↔ OFF
DECK 2
N VOLUME-1 C.B
To A MAIN-1 PIN16
CON16
Q103
IC102
VR301 REC LEVEL
K SWITCH-3 C.B
CD/DAT ↔ LINE
S101 INPUT
ON ↔ OFF
S1820 BLANK SKIP
D1820
O VOLUME-2 C.B
CON6
To A MAIN-1 PIN6
VR401
VR401 BIAS FINE (NORM./CrO2)
To B MAIN-2 PIN20
CON20
LED501
LED502
LED501, LED502 DECK1, DECK2 LIGHT
L SWITCH-4 C.B
DECK1 ↔ DECK2
S1828 PHONES
S1825 TIMER
PLAY ↔ OFF ↔ REC
CON31
To Q RELAY PIN31
CON12
To A MAIN-1 PIN12
CON10-1
To B MAIN-2 PIN10-1
CON10-2
To B MAIN-2 PIN10-2
Q RELAY C.B
P H.P JACK C.B
CON7
To C H.P AMP PIN7
J251 PHONES
CON5
To A MAIN-1 PIN5
CON4
To A MAIN-1 PIN4
F DOLBY HX-2 C.B
IC61
IC62
IC63
IC64
IC902
TO A MAIN-1 C.B

# SCHEMATIC DIAGRAM-3




## ADJUSTMENT




1. High Speed Adjustment (DECK-1)
   Settings : • Test tape : TTA-111H
   • Test point : LINE OUT
   • Adjustment location : SFR 1102
   Method : Set up the high speed condition. Adjust for 3kHz.

2. High Speed Adjustment (DECK-2)
   Settings : • Test tape : TTA-111H
   • Test point : LINE OUT
   • Adjustment location : SFR 1401
   Method : Make pins of TP1 shorted to set up the high speed condition. Then play back the test tape. Adjust for 3kHz.

3. Normal Speed Adjustment (DECK-1,DECK-2)
   Settings : • Test tape : TTA-111S
   • Test point : LINE OUT
   • Adjustment location : SFR 1101 (DECK-1)
   SFR 1402 (DECK-2)
   Method : Play back the test tape,adjust for 3kHz.

4. Head Azimuth Adjustment (DECK-1, DECK-2)
   Settings : • Test tape : TTA-317H
   • Test point : LINE OUT
   • Adjustment location : Head azimuth adjustment screw
   Method : Play back the 10kHz signal of the test tape, and adjust for maximum output.

5. PB Frequency Response Adjustment (DECK-1,DECK-2)
   Settings : • Test tape: TTA-317H
   • Test point : LINE OUT
   • DOLBY NR switch : OFF
   • Adjustment location : SFR 3 (DECK-1,Lch)
   SFR 4 (DECK-1,Rch)
   SFR 33 (DECK-2,Lch)
   SFR 34 (DECK-2,Rch)
   Method : Play back the test tape, and adjust so that 10kHz signal becomes 1 ± 0.5dB against 1kHz signal.

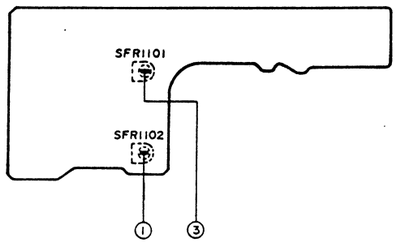
6. PB Sensitivity Adjustment (DECK-1,DECK-2)
   Settings : • Test tape : TTA-161
   • Test point : LINE OUT
   • DOLBY NR switch : OFF
   • Adjustment location : SFR 1 (DECK-1,Lch)
   SFR 2 (DECK-1,Rch)
   SFR 31 (DECK-2,Lch)
   SFR 32 (DECK-2,Rch)
   Method : Play back the test tape,and adjust for 560mV ± 0.5dB.

7. REC OSC Frequency Adjustment (DECK-2)
   Settings : • Test tape : TTA-119K
   • Test point : TP2
   • Adjustment location : L401
   Method : Set in REC mode and adjust for 100kHz ± 1kHz

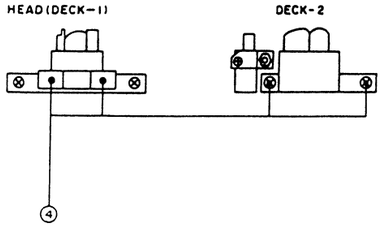
8. Bias OSC Trap Coil Adjustment (DECK-2)
   Settings : • Test tape : NORM. CASSETTE removed tape.
   • Test point : LINE OUT
   • TAPE MONITOR switch : TAPE
   • Adjustment location : L51 (Lch)
   L52 (Rch)
   Method : Set the DECK-2 in REC mode.Adjust for minimum level of the bias leakage.

9. REC/PB Frequency Response Adjustment (DECK-2)
   Settings : • Test tape : TTA-119H
   • Test point : LINE OUT
   • Input signal : 1kHz, -20dB(41mV)
   10kHz, -20dB(41mV)
   • REC VR : Center click point.
   • DOLBY NR switch : OFF
   • Adjustment location : SFR 901 (Lch)
   SFR 902 (Rch)
   Method : Record the 1kHz and 10kHz signals, then play back the two signals and adjust so that 10kHz signal becomes higher of 0.5 ± 0.5dB than 1kHz signal.

T DECK C.B (DECK-1)




HEAD (DECK-1) DECK-2




10. REC/PB Sensitivity Adjustment (DECK-2)
Settings : • Test tape : TTA-119H
• Test point : LINE OUT
• DOLBY NR switch : OFF
• Adjustment location : SFR 61 (Lch)
SFR 62 (Rch)
Method : Record the 1 kHz signal, then play back the signsl, and adjust for 0 ± 0.5dB.

11. High Speed Dubbing REC/PB Frequency Response Adjustment
Settings : Test tape : TTA-317H (DECK-1)
TTA-119M (DECK-2)
• Test point : LINE OUT
• Adjustment location : SFR 5 (Lch)
SFR 6 (Rch)
Method : Record in high speed dubbing mode, then play back the signal and adjust so that 10kHz signal becomes 0 ± 1dB against 1kHz signal.

12. Dolby "C" NR Bias OSC Trap Coil Adjustment
Settings : • Test tape : TTA-119K
• Test point : LINE OUT
• TAPE MONITOR switch : TAPE
• Input signal : 300Hz, −20dB (41mV)
• DOLBY NR switch : "C"
• Adjustment location : L 301 (L-ch)
L 51 (L-ch)
L 302 (R-ch)
L 52 (R-ch)
Method : Record 300Hz signal, then adjust for minimum level of 300Hz signal.
To make sure of the following, turn Dolby NR switch to "OFF" mode.
The level in "OFF" mode becomes lower of 0~5dB than the one in "C" mode.

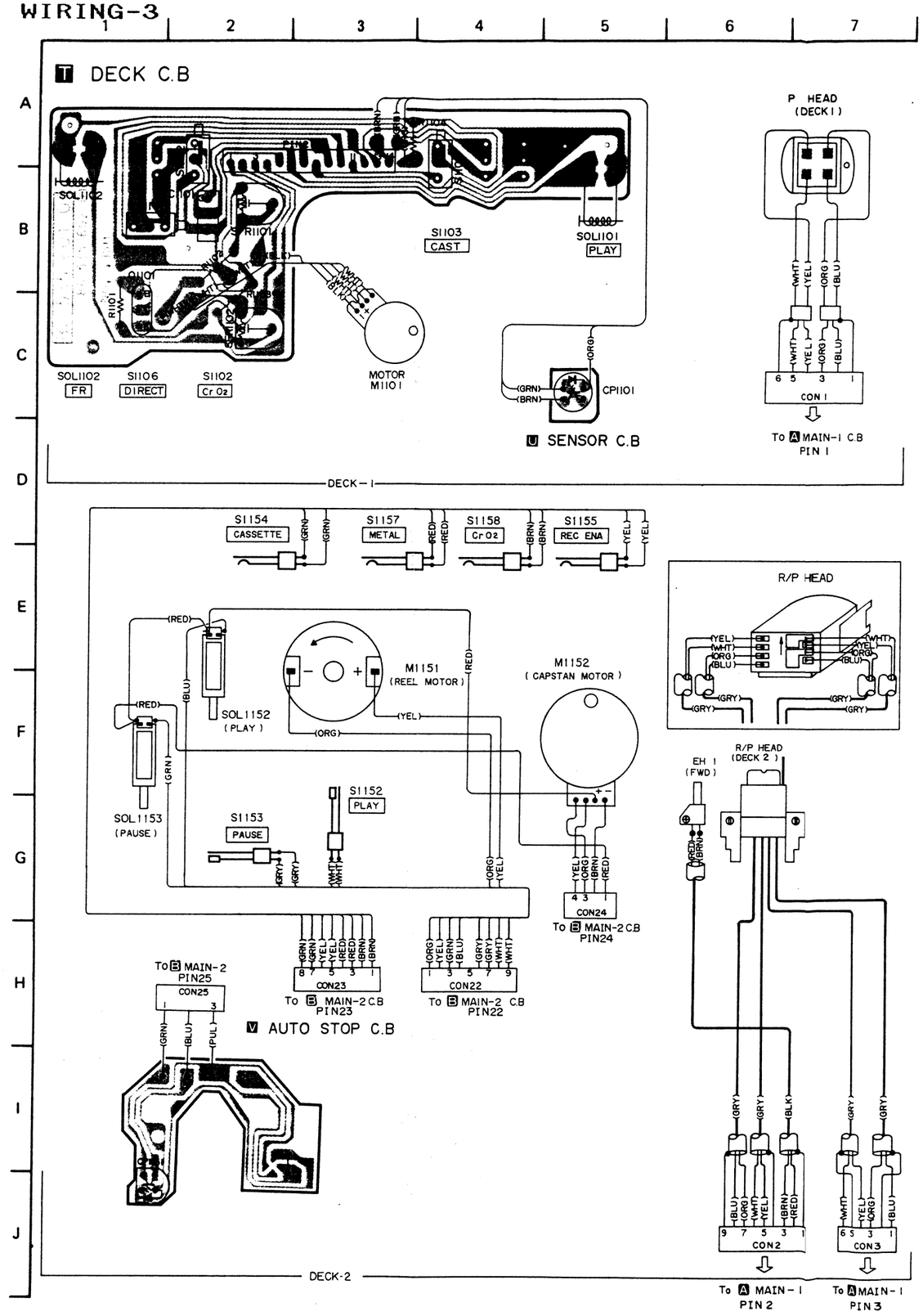
13. High Speed Bias OSC Trap Coil Adjustment
Settings : • Test tape : TTA-119K (DECK-2)
Cassette removed tape (DECK-1)
• Test point : LINE OUT
• DOLBY NR switch : OFF
• Adjustment location : L 1 (Lch)
L 2 (Rch)
Method : Make in high speed dubbing mode, adjust for minimum level of the bias leakage.

## PRACTICAL SERVICE FIGURE

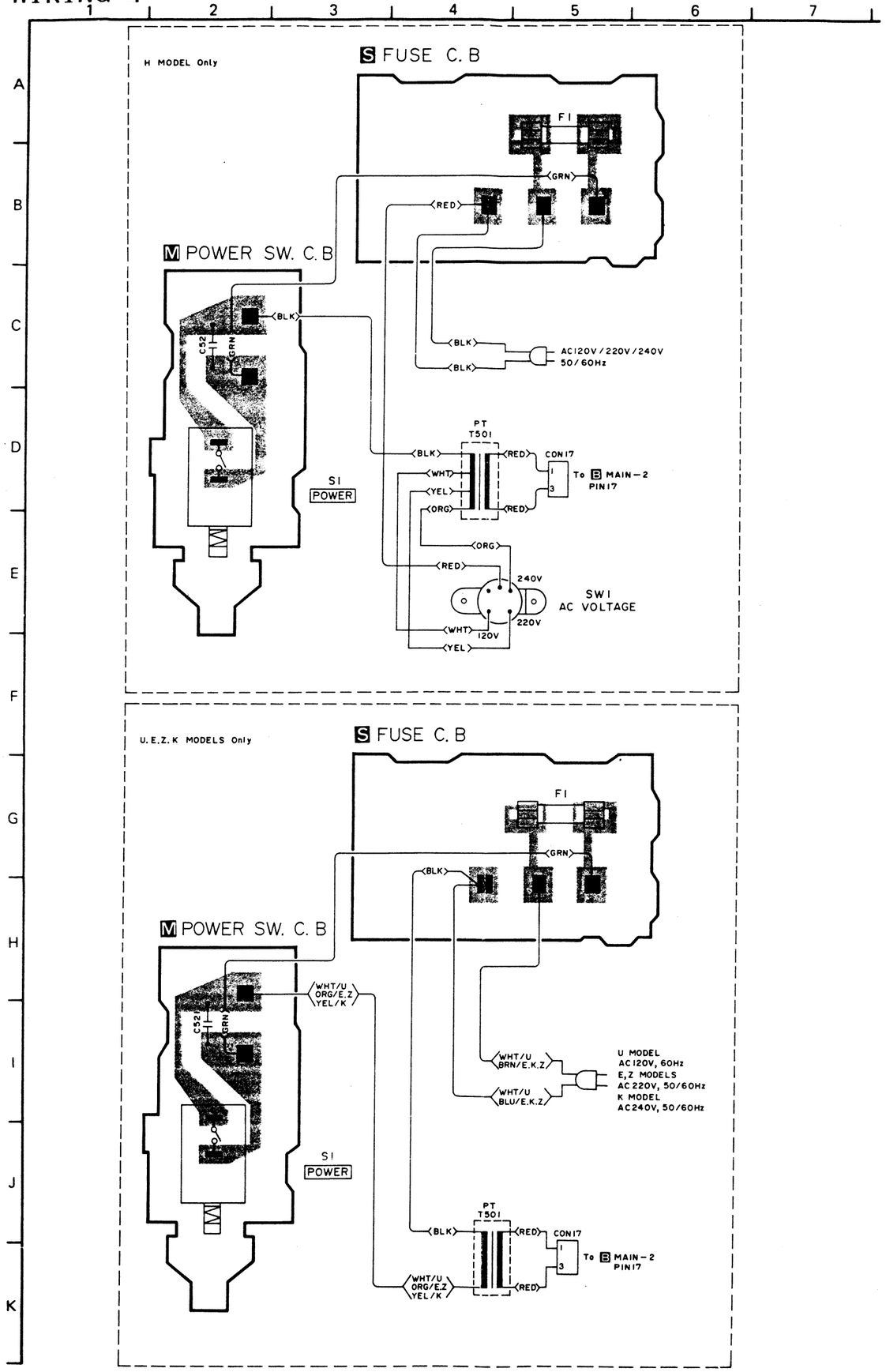
| | |
|---|---|
| Wow & flutter : | Less than 0.065% (DECK1)<br>Less than 0.046% (DECK2) (FWD./REV.) |
| Pinch roller pressure : | 290 ± 70g (DECK1) (2.84 ± 0.69N)<br>350 ± 30g (DECK2) (3.43 ± 0.3N) |
| Take-up torque : | 30 ~ 60g-cm (DECK1) (0.29 ~ 0.59mN·m)<br>35 ± 6g-cm (DECK2) (0.34 ± 0.06mN·m) |
| F. F & REW torque : | 130 ± 30g-cm (DECK1) (1.27 ± 0.29mN·m)<br>150 ± 30g-cm (DECK2) (1.47 ± 0.29mN·m) |
| Back tension : | 2.5 ~ 5.5g-cm (DECK1) (0.025 ± 0.054mN·m)<br>5 ± 1g-cm (DECK2) (0.05 ± 0.001mN·m) |
| PB output level : | 500 ± 50mV (TTA-161) |
| REC/PB output : | 0VU ± 1.5dB |
| REC/PB S/N ratio : | More than 42/48dB (METAL, $CrO_2$, DOLBY-NR C OFF/ON)<br>More than 39/46dB (NORMAL, DOLBY-NR OFF/ON) |
| Distortion (REC/PB) : | Less than 2% (METAL, $CrO_2$, NORMAL) |
| Noise (PB) : | Less than 2.5/1.2mV (METAL, $CrO_2$ DOLBY-NR C OFF/ON)<br>Less than 3.0/1.5mV (NORMAL, DOLBY-NR C OFF/ON) |
| Erasing ratio : | More than 60dB (at 125Hz) |
| Channel separation : | More than 30dB |
| Recording bias frequency : | 100kHz |
| Test tape : | METAL TTA-119MP<br>$CrO_2$ TTA-119H<br>NORMAL TTA-119K |







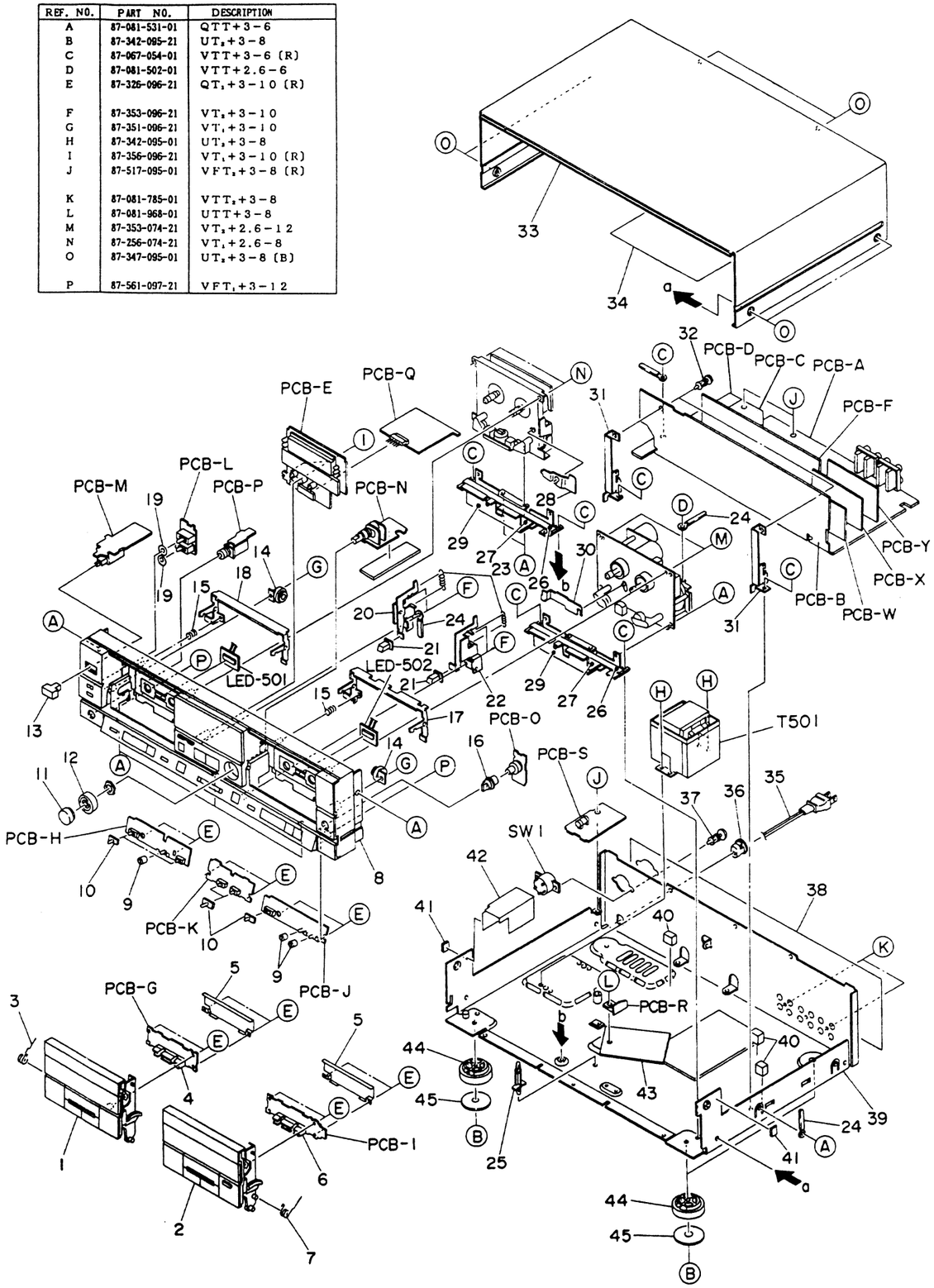
# WIRING-4






# EXPLODED VIEW-1

| REF. NO. | PART NO. | DESCRIPTION |
|---|---|---|
| A | 87-081-531-01 | QTT+3-6 |
| B | 87-342-095-21 | UT,+3-8 |
| C | 87-067-054-01 | VTT+3-6 (R) |
| D | 87-081-502-01 | VTT+2.6-6 |
| E | 87-326-096-21 | QT,+3-10 (R) |
| F | 87-353-096-21 | VT,+3-10 |
| G | 87-351-096-21 | VT,+3-10 |
| H | 87-342-095-01 | UT,+3-8 |
| I | 87-356-096-21 | VT,+3-10 (R) |
| J | 87-517-095-01 | VFT,+3-8 (R) |
| K | 87-081-785-01 | VTT,+3-8 |
| L | 87-081-968-01 | UTT+3-8 |
| M | 87-353-074-21 | VT,+2.6-12 |
| N | 87-256-074-21 | VT,+2.6-8 |
| O | 87-347-095-01 | UT,+3-8 (B) |
| P | 87-561-097-21 | VFT,+3-12 |



# MECHANICAL PARTS LIST

※ Please order the all parts for this model to Japan.

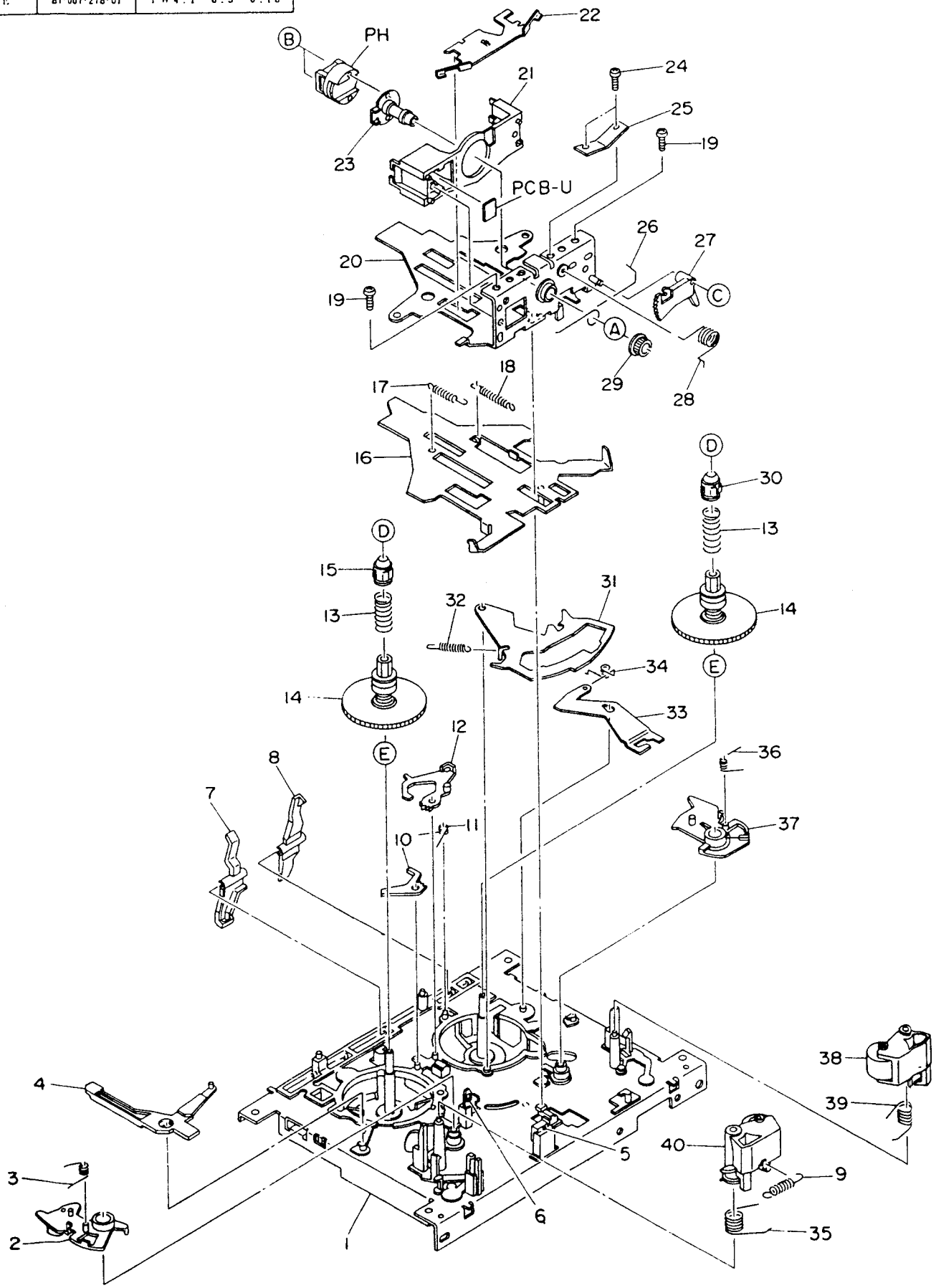
| PART NO. CHANGED TO | REF. NO. | PART NO. | DESCRIPTION | COMMON MODEL | Q, TY |
|---|---|---|---|---|---|
| | 1-1 | 09-047-264 | CASSETTE BOX 1 ASSY | * | 1 |
| | 1-2 | 09-047-265 | CASSETTE BOX 2 ASSY | * | 1 |
| | 1-3 | ★82-217-209 | T-SPRING,EJECT 1 | * | 1 |
| | 1-4 | --- | LAMP HOUSE 1 | | 1 |
| | 1-5 | --- | PLATE,BOX REAR | | 1 |
| | 1-6 | --- | LAMP HOUSE 2 | | 1 |
| | 1-7 | ★82-217-210 | T-SPRING, EJECT 2 | * | 1 |
| | 1-8 | ★09-047-263 | FRONT CABINET ASSY | * | 1 |
| | 1-9 | --- | RUBBER TUBE 5-3-7 | | 3 |
| | 1-10 | ★82-217-013 | KNOB,SLIDE | * | 5 |
| | 1-11 | 82-217-015 | KNOB,VOLUME L | * | 1 |
| | 1-12 | 82-217-016 | KNOB,VOLUME R | * | 1 |
| | 1-13 | ★84-721-023 | PUSH-BUTTON,POWER | XC-001 | 1 |
| | 1-14 | ★87-063-143 | OIL-DAMP 75 | | 2 |
| | 1-15 | ★82-217-211 | C-SPRING,EJECT LEVER | * | 2 |
| | 1-16 | ★84-424-008 | KNOB,VOLUME | | 1 |
| | 1-17 | ★82-217-204 | PLATE,EJECT 2 | * | 1 |
| | 1-18 | ★82-217-203 | PLATE,EJECT 1 | * | 1 |
| | 1-19 | --- | BLIND HIMERON | | 2 |
| | 1-20 | ★82-217-237 | HOLDER EJECT 1 ASSY | * | 1 |
| | 1-21 | ★82-217-014 | KNOB,EJECT | * | 2 |
| | 1-22 | ★82-217-238 | HOLDER EJECT 2 ASSY | * | 1 |
| | 1-23 | ★81-747-327 | E-SPRING,PANEL | | 2 |
| | 1-24 | --- | WIRE BINDER | | 3 |
| | 1-25 | ★82-217-244 | HOLDER,CIRCUIT BOARD | * | 1 |
| | 1-26 | --- | DAMPER,MECHANISM 2 | | 2 |
| | 1-27 | --- | DAMPER,MECHANISM 1 | | 2 |
| | 1-28 | ★82-217-213 | LEVER,EJECT BLOCKING 1 | * | 1 |
| | 1-29 | ★82-217-215 | HOLDER,MECHANISM | * | 2 |
| | 1-30 | ★82-217-214 | LEVER,EJECT BLOCKING 2 | * | 1 |
| | 1-31 | --- | HOLDER,CIRCUIT BOARD | | 2 |
| | 1-32 | ★87-085-102 | NYLON RIVET 3.5-5.5 | | 2 |
| | 1-33 | ★82-217-041 | CABINET,STEEL | * | 1 |
| | 1-34 | --- | DAMPER 150-100 | | 1 |
| | 1-35 | ★87-034-732 | AC CORD ASSY(H ONLY) | | 1 |
| | 1-35 | ★87-034-731 | AC CORD ASSY(U ONLY) | | 1 |
| | 1-35 | ★87-034-736 | AC CORD ASSY(E,Z ONLY) | | 1 |
| | 1-35 | ★87-034-734 | AC CORD ASSY(K ONLY) | | 1 |
| | 1-36 | ★87-085-184 | CORD BUSHING(H ONLY) | | 1 |
| | 1-36 | ★87-085-189 | CORD BUSHING(U ONLY) | | 1 |
| | 1-36 | ★87-085-185 | CORD BUSHING(E,K,Z ONLY) | | 1 |
| | 1-37 | ★87-085-090 | NYLON RIVET 3-6.5(H ONLY) | | 2 |
| | 1-38 | --- | PLATE,JACK | | 1 |
| | 1-39 | --- | AMP.CHASSIS ASSY | | 1 |
| | 1-40 | --- | CUSHION 12-15-12.5 | | 3 |
| | 1-41 | --- | G CUSHION 4X9.5X13.5 | | 2 |
| | 1-42 | --- | COVER,POWER | | 1 |
| | 1-43 | --- | HEAT SINK | | 1 |
| | 1-44 | ★81-715-051 | FOOT(4D) | | 4 |
| | 1-45 | ★82-217-096 | FELT 33.5 | | 4 |

# ■ACCESSORIES/PACKAGE LIST

| PART NO. CHANGED TO | REF. NO. | PART NO. | DESCRIPTION | COMMON MODEL | Q, TY |
|---|---|---|---|---|---|
| | 1 | ★82-217-901 | INSTRUCTION BOOKLET | * | 1 |
| | 2 | ★87-032-845 | SIEMENS PLUG (H ONLY) | | 1 |
| | 3 | ★87-034-978 | CW-254 BSK | | 3 |

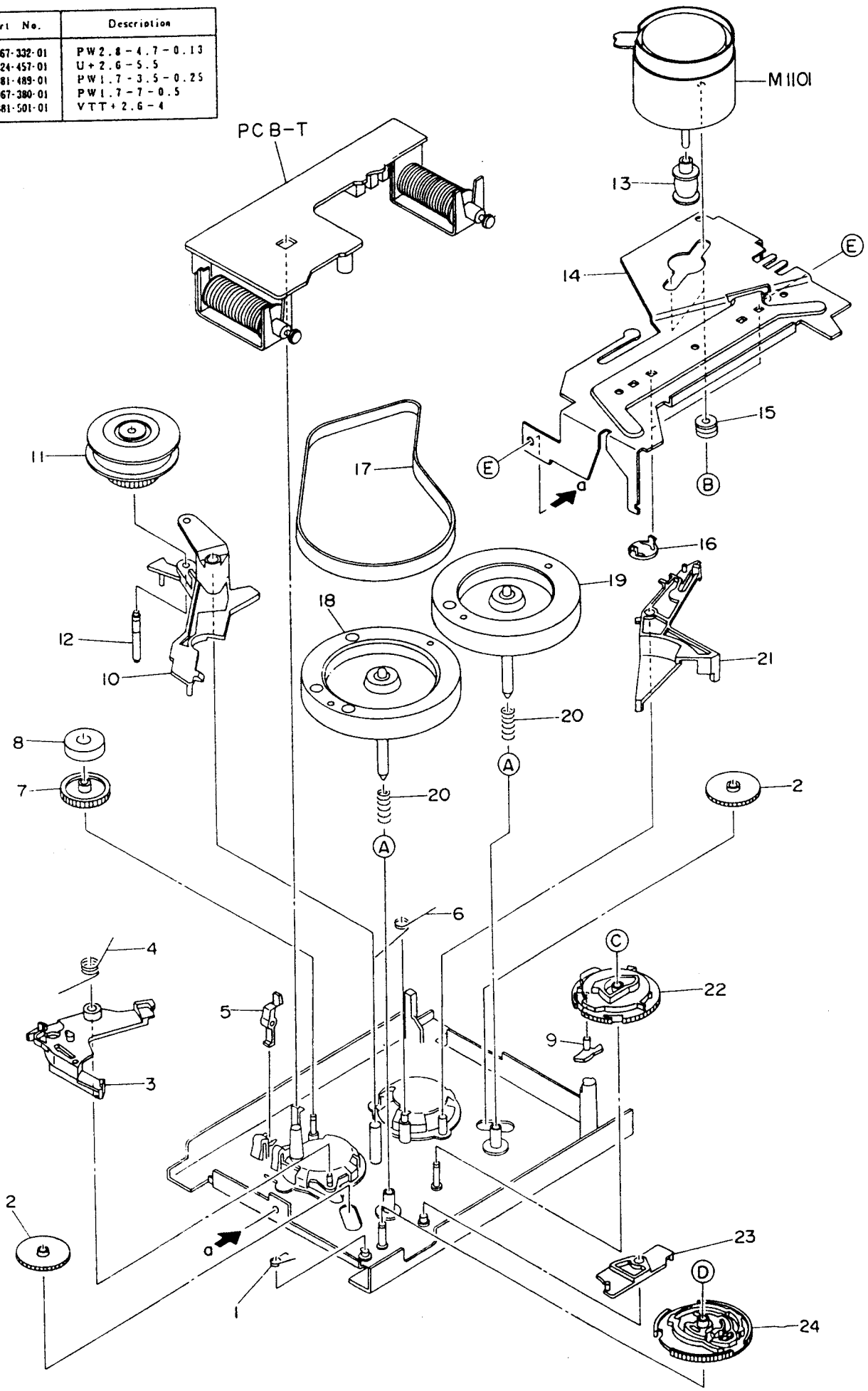
# EXPLODED VIEW-2 (DECK 1)

| Ref. No. | Part No. | Description |
|---|---|---|
| A | 87-067-364-01 | PW3.58-6-0.25C |
| B | 87-067-177-01 | V+1.6-5.5 |
| C | 87-081-489-01 | PW1.7-3.5-0.25 |
| D | 86-524-418-01 | VFT,+1.4-5 |
| E | 87-067-278-01 | PW4.1-6.5-0.13 |



# EXPLODED VIEW-3 (DECK 1)

| Ref. No. | Part No. | Description |
|---|---|---|
| A | 87-067-332-01 | PW2.6-4.7-0.13 |
| B | 86-524-457-01 | U+2.6-5.5 |
| C | 87-081-489-01 | PW1.7-3.5-0.25 |
| D | 87-067-380-01 | PW1.7-7-0.5 |
| E | 87-081-501-01 | VTT+2.6-4 |



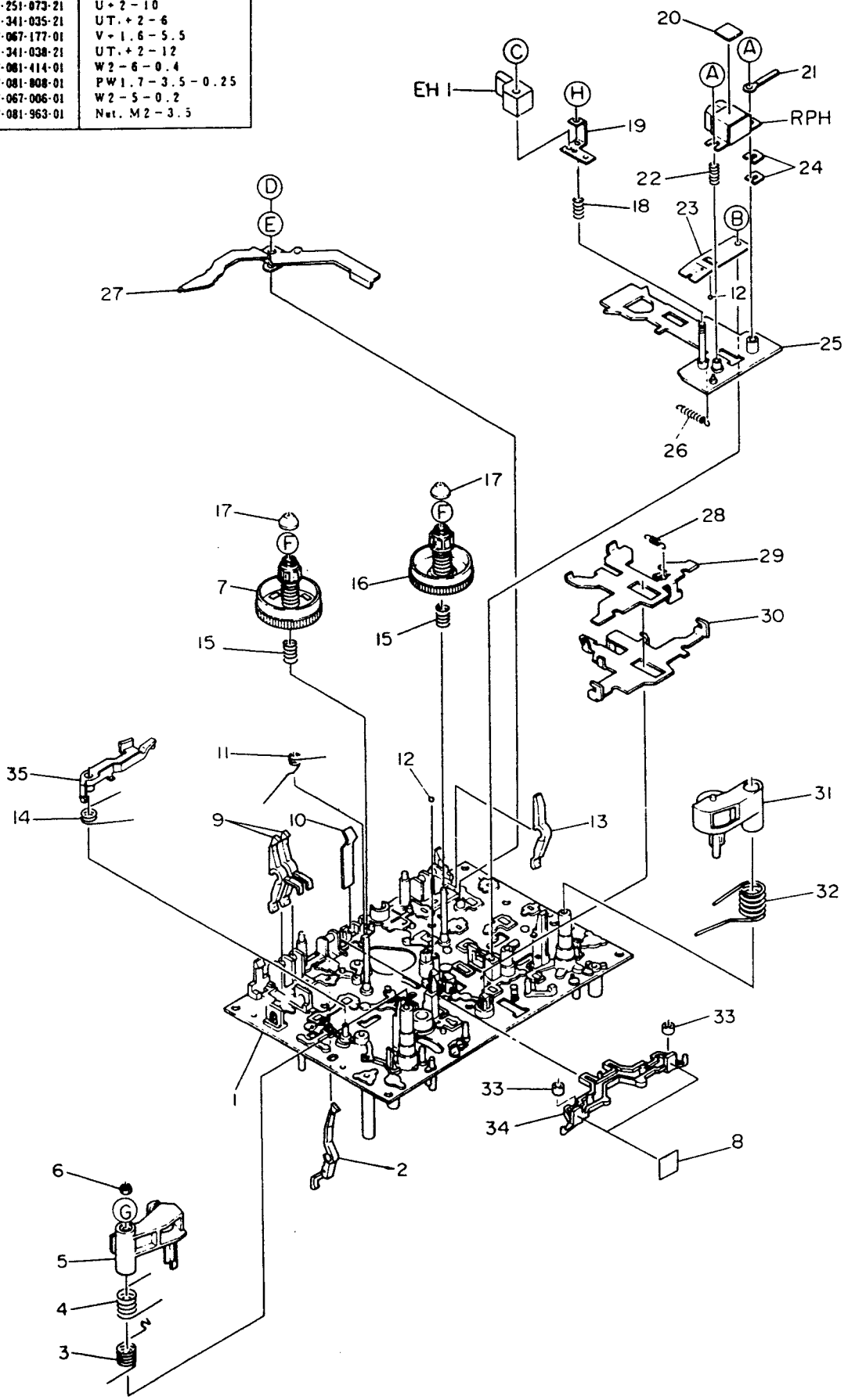
※ Please order the all parts for this model to Japan.

| PART NO. CHANGED TO | REF. NO. | PART NO. | DESCRIPTION | COMMON MODEL | Q, TY |
|---|---|---|---|---|---|
| | 2-1 | ★86-535-201 | OUTSERT CHASSIS ASSY | | 1 |
| | 2-2 | ★86-535-239 | LEVER,PLAY R | | 1 |
| | 2-3 | ★86-535-283 | T-SPRING,PLAY GEAR R | | 1 |
| | 2-4 | ★86-535-242 | LEVER,EJECT BLOCKING L | | 1 |
| | 2-5 | ★86-535-296 | FELT 5-5-2 | | 1 |
| | 2-6 | ★86-517-353 | SHEET | | 1 |
| | 2-7 | ★86-535-249 | LEVER,CASSETTE DETECTION | | 1 |
| | 2-8 | ★86-535-254 | LEVER,CHROME | | 1 |
| | 2-9 | ★86-535-287 | E-SPRING,PINCH | | 1 |
| | 2-10 | ★86-535-252 | LEVER,BRAKE R | | 1 |
| | 2-11 | ★86-535-276 | T-SPRING,BRAKE | | 1 |
| | 2-12 | ★86-535-251 | LEVER,BRAKE F | | 1 |
| | 2-13 | ★86-535-293 | C-SPRING,REEL PLATFORM | | 2 |
| | 2-14 | 86-535-240 | REEL PLATFORM R ASSY | | 1 |
| | 2-15 | ★86-524-218 | STOPPER,REEL PLATFORM S | | 1 |
| | 2-16 | ★86-535-215 | SLIDE PLATE ASSY | | 1 |
| | 2-17 | ★86-535-285 | E-SPRING,SLIDE | | 1 |
| | 2-18 | ★86-535-286 | E-SPRING,ACTUATING | | 1 |
| | 2-19 | ★86-535-310 | ADJUSTMENT SCREW | | 2 |
| | 2-20 | ★86-535-351 | ACTUATING CHASSIS ASSY | | 1 |
| | 2-21 | ★86-535-237 | GUIDE,TAPE | | 1 |
| | 2-22 | ★86-535-289 | P-SPRING,ACTUATING | | 1 |
| | 2-23 | ★86-535-270 | HEAD HOUSING ASSY | | 1 |
| | 2-24 | ★86-535-297 | ADJUSTMENT SCREW,AZIMUTH | | 2 |
| | 2-25 | ★86-524-300 | P-SPRING,AZIMUTH | | 1 |
| | 2-26 | ★86-535-298 | T-SPRING,GUIDE | | 1 |
| | 2-27 | 86-535-246 | GEAR,SEGMENT | | 1 |
| | 2-28 | ★86-535-290 | T-SPRING,GEAR SEGMENT | | 1 |
| | 2-29 | 86-524-278 | GEAR,HEAD HOUSING | | 1 |
| | 2-30 | ★86-524-233 | STOPPER,REEL PLATFORM T | | 1 |
| | 2-31 | ★86-535-218 | LEVER,DIRECTION ASSY | | 1 |
| | 2-32 | ★86-535-284 | E-SPRING,LEVER DELECTION | | 1 |
| | 2-33 | ★86-535-225 | LEVER,D SWITCH | | 1 |
| | 2-34 | ★86-535-277 | T-SPRING,D SWITCH | | 1 |
| | 2-35 | ★86-535-281 | T-SPRING,PINCH R | | 1 |
| | 2-36 | ★86-535-282 | T-SPRING,PLAY GEAR F | | 1 |
| | 2-37 | ★86-535-238 | LEVER,PLAY F | | 1 |
| | 2-38 | 86-535-226 | PINCH LEVER F ASSY | | 1 |
| | 2-39 | ★86-535-280 | T-SPRING,PINCH F | | 1 |
| | 2-40 | 86-535-228 | PINCH LEVER R ASSY | | 1 |

| PART NO. CHANGED TO | REF. NO. | PART NO. | DESCRIPTION | COMMON MODEL | Q, TY |
|---|---|---|---|---|---|
| | 3-1 | ★86-535-291 | T-SPRING,FR CAM | | 1 |
| | 3-2 | 86-535-259 | GEAR,PLAY | | 2 |
| | 3-3 | ★86-535-230 | LEVER,TRIGGER FR | | 1 |
| | 3-4 | ★86-535-278 | T-SPRING,FR | | 1 |
| | 3-5 | ★86-535-253 | LEVER,RELAY | | 1 |
| | 3-6 | ★86-535-279 | T-SPRING,MAIN | | 1 |
| | 3-7 | 86-535-258 | GEAR,IDLER | | 1 |
| | 3-8 | ★86-535-614 | RING,MAGNET(4P) | | 1 |
| | 3-9 | ★86-535-308 | LEVER,SELECT | | 1 |
| | 3-10 | ★86-535-233 | LEVER,FR | | 1 |
| | 3-11 | ★86-535-301 | SLIPDISC ASSY | | 1 |
| | 3-12 | ★86-535-235 | SHAFT,FR | | 1 |
| | 3-13 | ★86-535-315 | MOTOR PULLEY | | 1 |
| | 3-14 | --- | HOLDER,MOTOR | | 1 |
| | 3-15 | ★86-513-441 | COLLAR | | 2 |
| | 3-16 | ★86-535-255 | FLYWHEEL BEARING | | 2 |
| | 3-17 | 86-535-294 | BELT | | 1 |
| | 3-18 | 86-535-264 | FLYWHEEL F ASSY | | 1 |
| | 3-19 | 86-535-267 | FLYWHEEL R ASSY | | 1 |
| | 3-20 | ★86-535-288 | C-SPRING,FW | | 2 |
| | 3-21 | ★86-535-231 | LEVER,TRIGGER PLAY | | 1 |
| | 3-22 | ★86-535-260 | CAM,MAIN | | 1 |
| | 3-23 | ★86-535-223 | LEVER,PAUSE | | 1 |
| | 3-24 | ★86-535-261 | CAM,FR P | | 1 |
| | 3-25 | ★86-535-308 | LEVER,SELECT | | 1 |

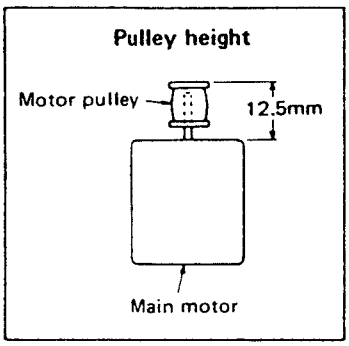
# 1 EXPLODED VIEW-4 (DECK 2)

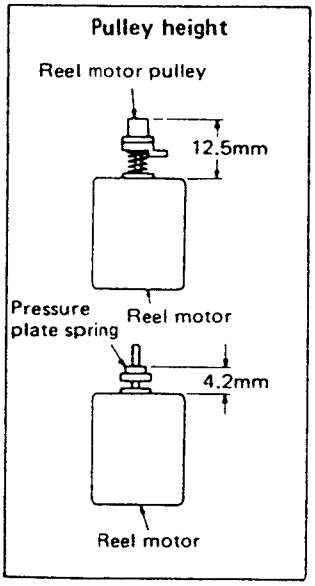
| Ref. No. | Part No. | Description |
|---|---|---|
| A | 87-251-873-21 | U + 2 - 10 |
| B | 87-341-035-21 | UT. + 2 - 6 |
| C | 87-067-177-01 | V + 1.6 - 5.5 |
| D | 87-341-038-21 | UT. + 2 - 12 |
| E | 87-081-414-01 | W2 - 6 - 0.4 |
| F | 87-081-808-01 | PW1.7 - 3.5 - 0.25 |
| G | 87-067-006-01 | W2 - 5 - 0.2 |
| H | 87-081-963-01 | Net, M2 - 3.5 |

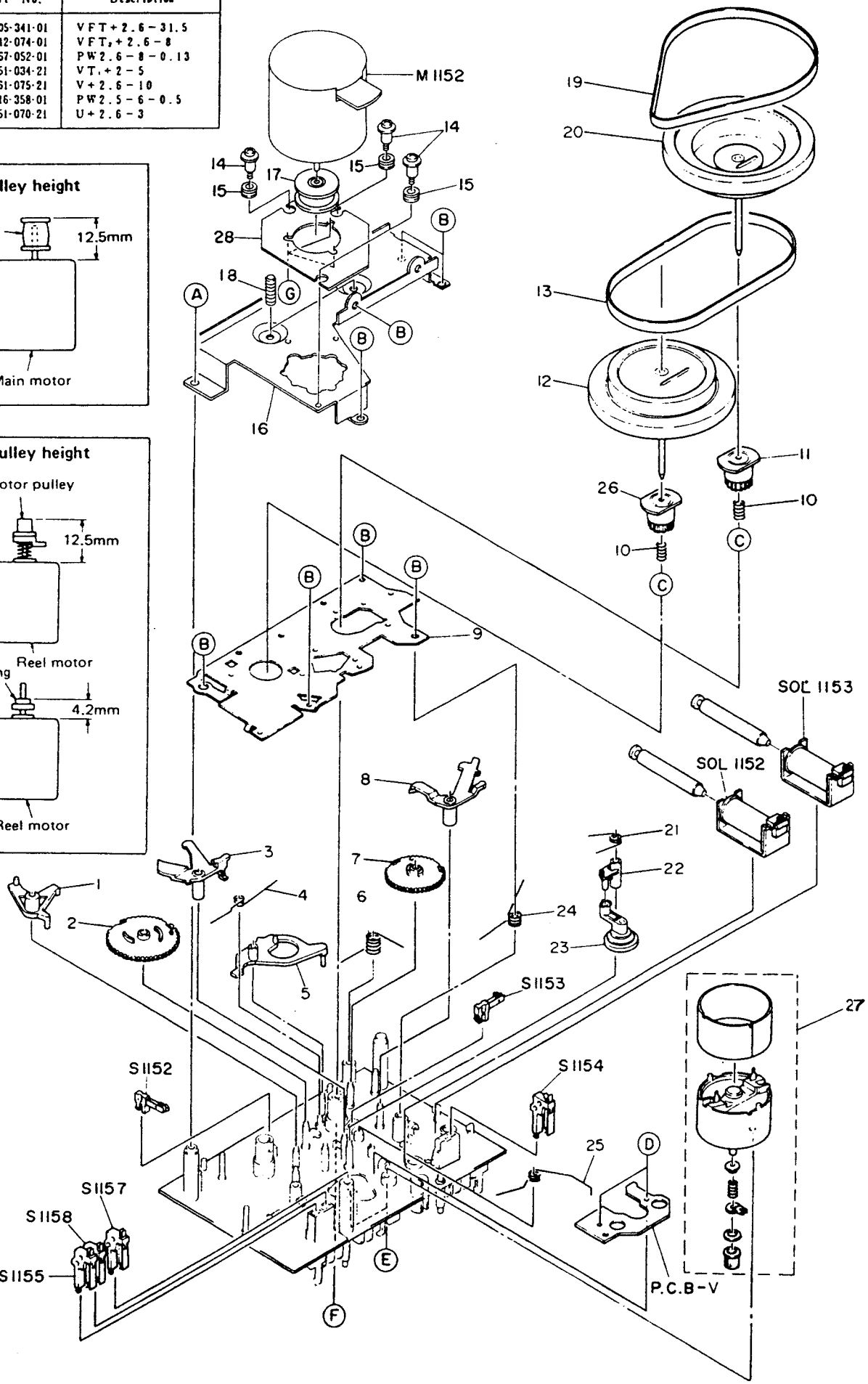


# EXPLODED VIEW-5 (DECK 2)

| Ref. No. | Part No. | Description |
|---|---|---|
| A | 81-505-341-01 | VFT+2.6-31.5 |
| B | 87-512-074-01 | VFT,+2.6-8 |
| C | 87-067-052-01 | PW2.6-8-0.13 |
| D | 87-351-034-21 | VT.+2-5 |
| E | 87-261-075-21 | V+2.6-10 |
| F | 82-416-358-01 | PW2.5-6-0.5 |
| G | 87-251-070-21 | U+2.6-3 |



※ Please order the all parts for this model to Japan.

| PART NO. CHANGED TO | REF. NO. | PART NO. | DESCRIPTION | COMMON MODEL | Q, TY |
|---|---|---|---|---|---|
| | 4-1 | ★81-507-260 | OUTSERT CHASSIS ASSY(4L-1) | | 1 |
| | 4-2 | ★81-505-242 | LEVER,METAL | | 1 |
| | 4-3 | ★81-507-228 | C-SPRING,PINCH LEVER S | | 1 |
| | 4-4 | ★81-507-217 | T-SPRING,PINCH LEVER S | | 1 |
| | 4-5 | 81-507-207 | PINCH LEVER S ASSY | | 1 |
| | 4-6 | ★87-081-963 | NYLON NUT M2-3.5 | | 1 |
| | 4-7 | 81-505-275 | REEL PLATFORM S ASSY | | 1 |
| | 4-8 | ★81-505-237 | FELT,SLIDE BRAKE | | 2 |
| | 4-9 | ★81-505-241 | REC BLOCKING LEVER | | 2 |
| | 4-10 | ★86-516-289 | P-SPRING,CASSETTE PRESSURE | | 1 |
| | 4-11 | ★81-505-268 | T-SPRING,SLIDE BRAKE | | 1 |
| | 4-12 | ★87-073-005 | STEEL BALL 2 | | 2 |
| | 4-13 | ★81-505-240 | SENSOR LEVER,CASSETTE | | 1 |
| | 4-14 | ★81-507-223 | T-SPRING,B.T | | 1 |
| | 4-15 | ★81-507-219 | C-SPRING,REEL S | | 2 |
| | 4-16 | 81-505-369 | REEL PLATFORM T ASSY-2 | | 1 |
| | 4-17 | ★82-303-398 | CAP,TAKE-UP REEL | | 2 |
| | 4-18 | ★81-507-251 | C-SPRING,EH B | | 1 |
| | 4-19 | ★81-507-250 | HOLDER C,EH | | 1 |
| | 4-20 | --- | LABEL,HEAD | | 1 |
| | 4-21 | --- | WIRE BINDER 2.3 | | 1 |
| | 4-22 | ★82-307-212 | C-SPRING,EH | | 1 |
| | 4-23 | ★81-507-224 | P-SPRING,ACTUATING CHASSIS | | 1 |
| | 4-24 | ★81-507-227 | SPACER | | 2 |
| | 4-25 | ★81-507-252 | ACTUATING CHASSIS ASSY B | | 1 |
| | 4-26 | ★81-505-265 | E-SPRING,ACTUATING CHASSIS | | 1 |
| | 4-27 | ★81-505-307 | LEVER,EJECT BRAKE | | 1 |
| | 4-28 | ★81-505-266 | E-SPRING,PAUSE PLATE | | 1 |
| | 4-29 | ★81-505-207 | PLATE,PAUSE | | 1 |
| | 4-30 | ★81-507-220 | PLATE,PINCH LEVER | | 1 |
| | 4-31 | 81-505-210 | PINCH LEVER F ASSY | | 1 |
| | 4-32 | ★81-505-267 | T-SPRING,PINCH F | | 1 |
| | 4-33 | ★81-507-229 | G.BRAKE | | 2 |
| | 4-34 | ★81-505-236 | LEVER,SLIDE BRAKE | | 1 |
| | 4-35 | ★81-507-222 | LEVER,BACKTENSION | | 1 |

| PART NO. CHANGED TO | REF. NO. | PART NO. | DESCRIPTION | COMMON MODEL | Q, TY |
|---|---|---|---|---|---|
| | 5-1 | ★81-505-230 | LEVER,PLAY | | 1 |
| | 5-2 | 81-505-234 | GEAR,PLAY CAM | | 1 |
| | 5-3 | ★81-505-231 | TRIGGER LEVER,PLAY | | 1 |
| | 5-4 | ★81-505-272 | T-SPRING,CAM | | 1 |
| | 5-5 | ★81-505-308 | LEVER B,PAUSE | | 1 |
| | 5-6 | ★81-505-283 | T-SPRING,PAUSE LEVER | | 1 |
| | 5-7 | 81-505-235 | GEAR,PAUSE CAM | | 1 |
| | 5-8 | ★81-505-233 | TRIGGER LEVER,PAUSE | | 1 |
| | 5-9 | --- | MECHANISM CHASSIS B | | 1 |
| | 5-10 | ★81-505-261 | C-SPRING,FLYWHEEL F | | 2 |
| | 5-11 | 81-505-225 | GEAR,FLYWHEEL | | 1 |
| | 5-12 | ★81-507-244 | FLYWHEEL S ASSY FD | | 1 |
| | 5-13 | 81-507-247 | RUBBER BELT B | | 1 |
| | 5-14 | ★87-081-483 | MOTOR SCREW,M2.6 | | 3 |
| | 5-15 | ★87-087-029 | RUBBER CUSHION | | 3 |
| | 5-16 | --- | HOLDER,MOTOR(4L-1) | | 1 |
| | 5-17 | ★81-507-262 | PULLEY,MOTOR | | 1 |
| | 5-18 | ★82-565-373 | SCREW,THRUST | | 2 |
| | 5-19 | 81-507-261 | RUBBER BELT(4L-1) | | 1 |
| | 5-20 | ★81-507-242 | FLYWHEEL T ASSY FD | | 1 |
| | 5-21 | ★81-505-361 | T-SPRING,FR IDLER B | | 1 |
| | 5-22 | ★81-505-359 | IDLER LEVER FR C | | 1 |
| | 5-23 | 81-505-356 | FR IDLER B ASSY | | 1 |
| | 5-24 | ★81-505-271 | T-SPRING,TRIGGER LEVER | | 1 |
| | 5-25 | ★81-505-269 | T-SPRING,PINCH PLATE | | 1 |
| | 5-26 | 81-505-354 | GEAR,FLYWHEEL 2.7 | | 1 |
| | 5-27 | 09-011-038 | REEL MOTOR ASSY | | 1 |
| | 5-28 | --- | PLATE,MOTOR | | 1 |